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MARKETING & TRANSPORTATION Situation

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MARKET FACTS

Item	Unit or base period	1969		1970		
		Year	3rd qtr.	1st qtr.	2nd qtr.	3rd qtr.
Farm-Retail Price Spreads: 1/						
Retail cost	Dol.	1,173	1,195	1,225	1,227	1,235
Farm value	Dol.	477	492	506	483	482
Farm-retail spread	Dol.	696	703	719	744	753
Farmer's share of retail cost	Pct.	41	41	41	39	39
Retail Prices: 2/						
All goods and services (CPI)	1957-59=100	127.7	128.7	132.5	134.6	136.1
All food	1957-59=100	125.5	127.2	131.3	132.4	133.4
Food at home	1957-59=100	121.5	123.4	127.1	127.7	128.5
Food away from home	1957-59=100	144.6	145.8	151.5	154.7	156.8
Wholesale Prices: 2/						
Food 3/	1957-59=100	119.0	120.2	124.8	123.2	123.8
Cotton products	1957-59=100	105.2	105.6	106.0	105.8	106.2
Woolen products	1957-59=100	104.6	104.9	104.3	103.5	102.3
Agricultural Prices:						
Prices received by farmers	1957-59=100	114	115	120	115	116
Prices paid by farmers, interest, taxes and wage rates	1957-59=100	127	128	132	128	133
Prices of Marketing Inputs:						
Containers and packaging materials	1957-59=100	115	115	118	119	120
Fuel, power, and light	1957-59=100	105	105	110	116	122
Services 4/	1957-59=100	146	147	151	153	157
Hourly Earnings:						
Food marketing employees 5/	Dol.	2.84	2.84	2.96	3.01	
Employees, private nonagricultural sector 2/	Dol.	3.04	3.07	3.15	3.20	3.25
Farmers' Marketings and Income:						
Physical volume of farm marketings	1957-59=100	127	129	110	102	130
Cash receipts from farm marketings 6/ ..	Bil. dol.	47.2	47.4	49.0	49.0	48.0
Farmers' realized net income 6/	Bil. dol.	16.5	16.7	17.1	16.6	16.2
Industrial Production: 7/						
Food manufacturers	1957-59=100	136.7	136.9	140.2	139.8	
Textile mill products	1957-59=100	153.7	153.9	151.5	148.3	
Apparel products	1957-59=100	175.7	148.5	142.5	139.2	
Tobacco products	1957-59=100	117.2	117.9	119.1	121.2	
Retail Sales: 8/						
Food stores	Mil. dol.	75,866	19,030	20,008	20,330	
Eating and drinking places	Mil. dol.	25,849	6,433	6,752	6,990	
Apparel stores	Mil. dol.	20,158	5,114	4,959	5,106	
Consumers' Per Capita Income and Expenditures: 9/						
Disposable personal income	Dol.	3,108	3,148	3,252	3,333	3,359
Expenditures for goods and services ...	Dol.	2,842	2,860	2,948	2,995	3,017
Expenditures for food	Dol.	518	520	546	551	556
Expenditures for food as percentage of disposable income	Pct.	16.7	16.5	16.8	16.7	16.5

1/ For a market basket of farm foods. 2/ Dept. of Labor. 3/ Processed foods, eggs, and fresh and dried fruits and vegetables. 4/ Includes such items as rent, property insurance and maintenance, and telephone. 5/ Average hourly earnings of production workers in food processing, and nonsupervisory workers in wholesale and retail food trades, calculated from Dept. of Labor data. 6/ Quarterly data seasonally adjusted at annual rates. 7/ Seasonally adjusted, Board of Governors of Federal Reserve System. 8/ Quarterly data seasonally adjusted, Dept. of Commerce. 9/ Seasonally adjusted annual rates, calculated from Dept. of Commerce data. Percentages have been calculated from total income and expenditure data.

MARKETING AND TRANSPORTATION SITUATION

Approved by the Outlook and Situation Board, November 6, 1970

CONTENTS	
	Page
Summary	3
Farm-Food Market Basket Statistics	4
Costs and Profits in Marketing Farm Products	10
Recent Developments in Marketing	19
Status and Achievements of the Expanded Food and Nutrition Education Program	21
Food Product Dating	28
Food Prices Before and After Distribution of Welfare Checks	34
Selected New Publications	39
Quarterly Data for the Market Basket of Farm Foods .	41

SUMMARY*

The retail cost of the market basket of farm foods in the first 3 quarters of 1970 rose 3.0 percent, much less than the 5.8 percent rise for the like period last year. Mainly as a result of cost increases in July, third quarter costs rose 0.7 percent over the second, to an average of \$1,235 (annual rate). This occurred despite reduced returns to farmers for some products in the market basket.

Retail costs of market basket foods may average slightly above current levels through the first half of next year. Abundant food supplies and a slackening in the advance of disposable income will help hold down the rise in food prices. Returns to farmers for market basket foods, particularly red meat, may decline. But marketing spreads will likely increase, resulting in little change in retail food costs.

The farmer's share of the consumer's food dollar is expected to average 38 cents in the first half of 1971, 1 cent less than in the third quarter this year. The third quarter share was the same as in the previous quarter, but 2 cents below a year earlier.

Gross returns to farmers (farm value) for foods in the market basket averaged \$482 in the third quarter, down 0.3 per-

cent from the previous quarter. Lower returns for hogs and fresh vegetables largely offset increases for eggs and fresh fruits. Within the third quarter, returns to farmers dropped sharply from July to August.

While retail costs in the third quarter were up 3.3 percent from a year earlier, returns to farmers were down 2.1 percent. Lower returns for hogs, poultry, eggs, and processed fruits and vegetables contrasted with higher returns for wheat, soybeans, and some fresh fruits and vegetables.

Marketing spreads, as measured by the difference between the retail cost and farm value of the market basket, averaged \$753 in the third quarter, 1.3 percent more than in the previous quarter. This accounted for all of the increase in the retail cost of the market basket.

The marketing spread in the third quarter was substantially higher (7.1 percent) than a year earlier. Spreads for many products were up 5 to 10 percent, and pork's spread jumped a fourth. The increase in the spread for pork nearly equaled the decline in the farm value of pork, reflecting the general tendency for spreads to increase when farm and wholesale prices declined.

*The summary of this report and a table were released to the press on November 6, 1970.

FARM-FOOD MARKET BASKET STATISTICS

Retail Cost: Retail prices for farm-originated foods edged higher in the third quarter of 1970 following several months of very little change (table 1). So far this year, however, prices have risen at a much slower rate than in 1969, reflecting the general easing of inflationary pressures in the economy.

The retail cost of the market basket of farm-originated foods ^{1/} averaged \$1,235 (annual rate) in the third quarter of this year--up \$8 or 0.7 percent from the previous quarter. The cost peaked in July and then declined slightly in August and September (table 2). Sharply higher prices for eggs and fresh fruits contributed most to the third quarter rise, but there were lower prices for fresh vegetables.

The slowing of the rate of increase in food prices is reflected in the comparison of prices in 1970 with a year ago. In the first quarter this year, the retail cost of market basket foods was about 8 percent higher than a year earlier. In the third quarter the difference had narrowed to slightly over 3 percent. All product groups except poultry and eggs were higher in the third quarter than a year ago although the differences were generally smaller than earlier in the year. Meat products, for example, were about 14 percent higher in the first quarter of 1970 than a year earlier compared to 2 percent higher in the third quarter.

The retail cost of market basket foods in the third quarter averaged 26 percent above the 1957-59 average. Most of the increase has occurred since 1964.

Farm Value: The total farm value for market basket foods in the third quarter changed little from the previous quarter, despite sharp price changes for some products. Farm value totaled \$482 (annual rate), 0.3 percent below the second quarter. However, farm prices of eggs and fresh fruits rose around 20 percent. In contrast, prices of hogs and most fresh vegetables declined sharply.

Compared with the third quarter last year, farm value of the market basket was down 2.1 percent. Farm values of most animal products--meat animals, poultry, eggs--and processed fruits and vegetables were lower. There were higher returns for wheat, soybeans, and some fresh fruits and vegetables--oranges, lettuce, potatoes, and tomatoes.

Farm value of market basket foods in the third quarter was about 5 percent below the record of \$506 established in the first quarter of this year. Third quarter farm values averaged 24 percent above the 1957-59 average.

Farm-Retail Spread: The increase in the retail cost of market basket foods in the third quarter was due entirely to higher marketing spreads. The spread between the retail cost and farm value of market basket foods averaged \$753 (annual rate), \$10 or 1.3 percent more than in the previous quarter. Spreads widened for all product groups except poultry, eggs, and fresh vegetables. Increases were largest for meat products, fresh fruits, and fats and oils.

^{1/} The market basket contains the average quantities of domestic, farm-originated food products purchased annually per household in 1960 and 1961 by wage-earners and clerical-worker families and single workers living alone. Its retail cost is calculated from retail prices published by the Bureau of Labor Statistics. The retail cost of the market basket foods is less than the cost of all foods bought per household, since it does not include cost of meals in eating places, imported foods, seafoods or other foods not of farm origin. The farm value is the gross return to farmers for the farm products equivalent to foods in the market basket. The farm-retail spread--difference between the retail cost and farm value--is an estimate of the total gross margin received by marketing firms for assembling, processing, transporting, and distributing the products in the market basket.

Table 1.--The market basket of farm foods by food group: Retail cost, farm value and farm-retail spread July-September 1970, April-June 1970, July-September 1969.

Items	: July -- : Sept. : 1970	: April - : June : 1970	: July - : Sept. : 1969	Change: July-September 1970 from			
				: April-June 1970	: July-September 1969		
	Dol.	Dol.	Dol.	Dol.	Pct.	Dol.	Pct.
Retail cost 1/							
Market basket.....	1,234.51	1,225.52	1,194.74	7.99	.7	39.77	3.3
Meat products.....	379.50	379.27	371.81	.23	.1	7.69	2.1
Dairy products.....	218.93	217.30	209.00	1.63	.8	9.93	4.8
Poultry.....	49.32	50.44	53.26	-1.12	-2.2	-3.94	-7.4
Eggs.....	42.61	38.99	43.11	3.62	9.3	- .50	-1.2
Bakery and cereal products.....	184.97	182.67	173.89	2.30	1.3	11.08	6.4
Fresh fruits.....	55.81	49.70	54.89	6.11	12.3	.92	1.7
Fresh vegetables....	80.14	87.63	74.47	-7.49	-8.5	5.67	7.6
Processed fruits and vegetables....	127.53	126.23	125.29	1.30	1.0	2.24	1.8
Fats and oils.....	41.15	40.37	37.75	.78	1.9	3.40	9.0
Miscellaneous products.....	54.55	53.92	51.27	.63	1.2	3.28	6.4
Farm value 2/							
Market basket.....	481.89	483.45	492.28	-1.56	- .3	-10.39	-2.1
Meat products.....	205.33	210.21	217.13	-4.88	-2.3	-11.80	-5.4
Dairy products.....	104.18	104.04	101.13	.14	.1	3.05	3.0
Poultry.....	22.66	23.18	27.27	- .52	-2.2	- 4.61	-16.9
Eggs.....	27.06	22.40	28.95	4.66	20.8	- 1.89	-6.5
Bakery and cereal products.....	35.36	35.25	33.17	.11	.3	2.19	6.6
Fresh fruits.....	16.05	13.39	15.33	2.66	19.9	.72	4.7
Fresh vegetables....	25.00	28.89	22.78	-3.89	-13.5	2.22	9.7
Processed fruits and vegetables....	24.46	24.10	27.36	.36	1.5	-2.90	-10.6
Fats and oils.....	12.11	12.31	9.80	- .20	- 1.6	2.31	23.6
Miscellaneous products.....	9.68	9.68	9.36	0	0	.32	3.4
Farm-retail spread							
Market basket.....	752.62	743.07	702.46	9.55	1.3	50.16	7.1
Meat products.....	174.17	169.06	154.68	5.11	3.0	19.49	12.6
Dairy products.....	114.75	113.26	107.87	1.49	1.3	6.88	6.4
Poultry.....	26.66	27.26	25.99	-.60	-2.2	.67	2.6
Eggs.....	15.55	16.59	14.16	-1.04	-6.3	1.39	9.8
Bakery and cereal products.....	149.61	147.42	140.72	2.19	1.5	8.89	6.3
Fresh fruits.....	39.76	36.31	39.56	3.45	9.5	.20	.5
Fresh vegetables....	55.14	58.74	51.69	-3.60	-6.1	3.45	6.7
Processed fruits and vegetables....	103.07	102.13	97.93	.94	.9	5.14	5.2
Fats and oils.....	29.04	28.06	27.95	.98	3.5	1.09	3.9
Miscellaneous products.....	44.87	44.24	41.91	.63	1.4	2.96	7.1

1/ Retail cost of average quantities purchased annually per household in 1960-61 by urban wage earner and clerical-worker families and single workers living alone, calculated from retail prices collected by the Bureau of Labor Statistics.

2/ Payment to farmer for equivalent quantities of farm products minus imputed value of byproducts obtained in processing.

Table 2.--The market basket of farm foods: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, averaged 1947-49 and 1957-59, annual 1960-69, monthly 1969-70 ^{1/}

Year and month	Retail cost	Farm value	Farm-retail spread	Farmer's share
	Dollars	Dollars	Dollars	Percent
Average:				
1947-49	890	441	449	50
1957-59	983	388	595	39
1960	991	383	608	39
1961	997	380	617	38
1962	1,006	384	622	38
1963	1,013	374	639	37
1964	1,014	374	640	37
1965	1,038	408	630	39
1966	1,095	443	652	40
1967	1,080	414	666	38
1968	1,118	435	683	39
1969 ^{2/}	1,173	477	696	41
1969 ^{3/}				
January	1,138	447	691	39
February	1,136	452	684	40
March	1,141	460	681	40
April	1,150	462	688	40
May	1,157	473	684	41
June	1,178	494	684	42
July	1,190	497	693	42
August	1,197	495	702	41
September	1,196	485	711	41
October	1,187	478	709	40
November	1,195	491	704	41
December	1,215	499	716	41
1970 ^{2/} ^{3/}				
January	1,223	501	722	41
February	1,227	508	719	41
March	1,224	509	715	42
April	1,226	487	739	40
May	1,226	485	741	40
June	1,228	479	749	39
July	1,237	498	739	40
August	1,236	476	760	38
September	1,231	472	759	38
October				
November				
December				

^{1/} Retail cost of average quantities purchased annually per household in 1960-61 by urban wage-earner and clerical-worker families and single workers living alone, calculated from retail prices collected by the Bureau of Labor Statistics. Data for earlier years are published in Farm-Retail Spreads for Food Products 1947-64, ERS-226, April 1965. ^{2/} Preliminary. ^{3/} Annual rates.

Marketing spreads for farm foods were 7.1 percent higher in the third quarter this year than a year earlier. The increase was distributed among spreads for all product groups. The increase in marketing spreads accounted for all of the year-to-year increase in the retail cost of market basket foods.

Thus far in 1970, marketing spreads have risen substantially more than the annual increase of 1.9 percent in 1969 and the average annual increase of 1.4 percent during the 1960's. The sharp gains this year undoubtedly reflect the substantial increase in wage costs and other costs of doing business during the inflationary period of the late 1960's. (See following article.) Marketing costs and price spreads rose nearly every year during the 1960's, and in the third quarter of 1970 the marketing spread for the market basket of farm foods was 27 percent higher than in 1957-59.

Farmer's Share: Farmers received an average of 39 cents of the dollar consumers spent for domestic farm foods in food stores in the third quarter this year. This was the same as in the previous quarter but 2 cents less than a year earlier.

Outlook for the First Half of 1971

Marketing spreads will likely rise further in the first half of 1971, but at a much slower pace than the annual rate of nearly 7 percent expected this year.

Returns to farmers, which have declined the past two quarters, are expected to average slightly below the third quarter level in the first half of 1971. In the first half of 1971 they are expected to average sharply below the record level of a year earlier mainly because of lower prices for meat animals.

Retail prices for market basket foods in the first half of next year may average slightly above current levels if marketing margins rise as expected. Smaller advances in disposable incomes and abundant food supplies are expected to hold down the rise in prices.

Operating costs of food marketing firms likely will rise in 1971. Hourly earnings and fringe benefits of food marketing employees are expected to continue rising, slightly more than offsetting increases in output per man-hour. Prices will also gain for most inputs bought by marketing firms.

The farmer's share of the consumers' dollar spent for food in the market basket during the first half of next year probably will average 38 cents--1 cent below third quarter and 2 cents less than in the first half of 1970.

Commodity Highlights

Fresh Vegetables: Although prices of some vegetables, mainly tomatoes and peppers, declined seasonally in the third quarter, the retail cost of fresh vegetables increased more than most other food groups the past year. The retail cost of fresh vegetables averaged 7.6 percent higher than in the like period of 1969. The farm value was up 9.7 percent and the farm-retail spread was 6.7 percent wider. Sharp increases for lettuce and potatoes accounted for much of these increases (tables 17 and 18, pp. 42-43).

Lettuce prices were up sharply in August and September as a result of a strike by lettuce workers in California which reduced marketings. Returns to growers in the third quarter rose 63 percent from the previous quarter and averaged 53 percent above a year earlier. Prices for lettuce at retail reflected most of the increase in farm value as marketing spreads were relatively stable.

A shortage of early summer potatoes boosted prices and marketing spreads to near record levels in July. Plentiful supplies in August and September caused prices and spreads to fall. Nevertheless, returns to farmers for potatoes in the third quarter averaged 22 percent above a year earlier; retail prices rose 13 percent and marketing spreads 10 percent.

Fats and Oils: Since the third quarter of 1969 the farm value of fats and oils products has risen 23.6 percent, reflecting

a sharp increase in the price received by farmers for soybeans. Marketing spreads increased by 3.9 percent. As a result, the retail cost of fats and oils products in the third quarter averaged 9.0 percent above a year earlier. In recent years, prices and margins for fats and oils products have been relatively stable.

Pork: Farm-retail spreads for pork have increased sharply since February of this year. Decreases in farm values and wholesale values between February and September were much greater than price decreases at retail. As a result, marketing spreads widened sharply. These changes are summarized as follows:

February September Change

----- Cents -----

Retail price			
per pound	81.8	76.7	-5.1
Wholesale value	65.2	55.1	-10.1
Farm value	50.0	35.5	-14.5
Farm-retail			
spread	31.8	41.2	9.4
Wholesale-			
retail spread	16.6	21.6	5.0
Farm-wholesale			
spread	15.2	19.6	4.4

Several factors help explain the sharp increase in the farm-retail price spread for pork. These include: (1) rapidly rising marketing costs, (2) increased supply of hogs and lower wholesale value, and (3) the nature of retail pricing policy and consumer demand.

Marketing costs have been rising rapidly. Since 1968, hourly earnings of retail store employees have been increasing at an average annual rate of 6.5 percent. Since labor costs represent about half of retail meat margins, hourly earnings have a significant effect on margins, particularly in the long run. Prices of other inputs used by food retailers also have increased rapidly in recent years.

Retailers must increase margins to cover rising marketing costs, but they may not immediately increase margins with every increase in operating costs. Retailers appear to absorb some cost increase during the short-run, particu-

larly when wholesale prices are rising sharply, so as to minimize consumer dissatisfaction with rising prices.

Margins tend to increase when wholesale prices are declining and to decrease when wholesale prices are increasing. This relationship was observed in an analysis of prices and spreads over the past 20 years. Declines in the wholesale price of pork or beef extending 3 months or more were nearly always accompanied by increases in the wholesale-retail price spread. The average increase in the wholesale-retail spread was 0.3 cent per 1.0-cent decline in the wholesale value. The farm-wholesale spread increased an average of 0.1 cent when wholesale value declined 1.0 cent.

Although more extreme, recent increases in the spread for pork are consistent with past trends. During February-September, the wholesale value of pork declined 10.1 cents and the wholesale-retail spread increased 5.0 cents per retail pound. In other words, the wholesale-retail spread increased 0.5 cent for every 1.0-cent decline in the wholesale value. The farm-wholesale spread also increased 4.4 cents, or 0.4 cent for every 1.0-cent decline in wholesale value.

One reason for the larger than usual increase in the spreads for pork may be that spreads changed very little in the late 1960's even though costs were rising steadily. In addition, wholesale pork prices were generally rising from December 1968 to January 1970. During this period, retail prices rose by the amount of increases in wholesale prices. However, as wholesale prices declined since February, retailers increased their spreads by a larger than usual amount, perhaps to bring them back in line with operating costs.

The large increase in pork margins parallels what happened for beef during the last half of 1969 when the carcass-retail spread increased 8.8 cents as the wholesale value declined 10.3 cents per pound (table 3). The carcass-retail spread for beef generally exceeds that for pork because more processing of beef is done in the retail store. Prior to June 1969 the carcass-retail spread averaged

Table 3.--Beef, pork, and lamb: Retail price, carcass value, farm value, farm-retail spread, and farmer's share of retail price, annual 1967-69, quarterly 1969-70

Date	Retail price	Carcass	Gross:	Byproduct	Net	Farm-retail spread			Farmer's
	per pound	value	farm	allowance	farm		Carcass-	Farm-	share
	1/	2/	3/	4/	5/	Total	retail	Carcass:	
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Percent
Beef, Choice grade									
1967.....	82.6	59.4	57.0	4.0	53.0	29.6	23.2	6.4	64
1968.....	86.6	63.1	60.5	3.8	56.7	29.9	23.5	6.4	65
1969.....	96.3	68.7	66.9	4.7	62.2	34.1	27.6	6.5	65
1969									
Jan.-Mar. . .	90.1	66.1	63.7	4.0	59.7	30.4	24.0	6.4	66
Apr.-June. . .	97.8	74.6	73.3	4.8	68.5	29.3	23.2	6.1	70
July-Sept. . .	101.0	69.7	67.9	5.1	62.8	38.2	31.3	6.9	62
Oct.-Dec. . .	96.3	64.3	62.9	4.9	58.0	38.3	32.0	6.3	60
1970									
Jan.-Mar. . .	98.1	68.6	66.6	5.0	61.6	36.5	29.5	7.0	63
Apr.-June. . .	99.3	69.3	68.2	4.9	63.3	36.0	30.0	6.0	64
July-Sept. . .	100.1	70.3	68.0	4.6	63.4	36.7	29.8	6.9	63
Oct.-Dec. . .									
Pork									
1967.....	67.2	51.5	37.3	2.5	34.8	32.4	15.7	16.7	52
1968.....	67.4	51.7	36.7	2.2	34.5	32.9	15.7	17.2	51
1969.....	74.3	58.5	45.5	3.2	42.3	32.0	15.8	16.2	57
1969									
Jan.-Mar. . .	68.5	52.8	38.4	2.6	35.8	32.7	15.7	17.0	52
Apr.-June. . .	71.9	56.5	43.5	2.9	40.6	31.3	15.4	15.9	56
July-Sept. . .	78.0	62.1	50.3	3.5	46.8	31.2	15.9	15.3	60
Oct.-Dec. . .	78.8	62.7	49.8	3.8	46.0	32.8	16.1	16.7	58
1970									
Jan.-Mar. . .	81.8	64.7	52.3	4.1	48.1	33.7	17.1	16.6	59
Apr.-June. . .	80.0	60.6	45.4	3.5	41.9	38.1	19.4	18.7	52
July-Sept. . .	79.0	58.0	43.0	3.3	39.7	39.3	21.0	18.3	50
Oct.-Dec. . .									
Lamb, Choice grade									
1967.....	87.4	62.8	54.4	5.8	48.6	38.8	24.6	14.2	56
1968.....	93.6	68.2	60.0	6.4	53.6	40.0	25.4	14.6	57
1969.....	101.8	74.8	66.9	7.6	59.3	42.5	27.0	15.5	58
1969									
Jan.-Mar. . .	96.7	71.6	64.7	8.3	56.4	40.3	25.1	15.2	58
Apr.-June. . .	101.0	77.2	67.8	7.9	59.9	41.1	23.8	17.3	59
July-Sept. . .	105.2	76.3	67.6	6.9	60.7	44.5	28.9	15.6	58
Oct.-Dec. . .	105.8	74.2	67.5	7.3	60.2	45.6	31.6	14.0	57
1970									
Jan.-Mar. . .	106.6	73.6	68.0	7.9	60.1	46.5	33.0	13.5	56
Apr.-June. . .	107.0	73.5	65.4	6.5	58.9	48.1	33.5	14.6	55
July-Sept. . .	108.2	75.0	65.9	5.6	60.3	47.9	33.2	14.7	56
Oct.-Dec. . .									

1/ Estimated weighted average price of retail cuts. 2/ For quantity equivalent to 1 lb. of retail cuts: Beef: 1.41 lb. of carcass beef; pork, 1.07 lb. of wholesale cuts; lamb, 1.18 lb. of carcass lamb. 3/ Payment to farmer for quantity of live animal equivalent to 1 lb. of retail cuts: Beef, 2.28 lb.; pork, 1.97 lb.; lamb, quantity varies by months from 2.42 lb. in May to 2.48 lb. in October. 4/ Portion of gross farm value attributed to edible and inedible byproduct. 5/ Gross farm value minus byproduct allowance.

about 8 cents higher for beef than for pork, but the difference increased to 12.4 cents in January-March 1970. With the recent increase in spreads for pork and the slight decrease in the spreads for

beef, the difference between the two spreads returned to about the original magnitude that reflects the difference in the amount of processing at retail.

COSTS AND PROFITS IN MARKETING FARM PRODUCTS

Labor Costs

Labor costs amount to about one-half of total costs incurred by firms processing and distributing farm products. Thus, labor costs are a major influence on marketing margins and consumer outlays for food. Labor costs are affected by several factors, the main ones being hourly earnings of employees and output per unit of labor. Increases in output per unit of labor (productivity) are necessary to keep the cost of labor per unit of output from rising as much as hourly earnings.

Hourly Earnings: Average hourly earnings of employees in firms processing and distributing food products have increased at an increasing rate for several years. Earnings are continuing up in 1970 but the rate of increase may be about the same as in 1969. In August of this year, employees of food marketing firms earned an average of \$3.01 per hour, up 6.4 percent from a year earlier which was the same as the annual increase in 1969 (table 4). The rise in hourly earnings in food marketing has been a part of the general rise in earnings throughout the economy. In the third quarter this year, hourly earnings of employees in the total private nonagricultural sector of the economy averaged \$3.25, 5.9 percent higher than a year earlier.

Increases in hourly earnings have been fairly comparable in food manufacturing, wholesaling, and retailing. In food manufacturing, hourly earnings averaged \$3.18 in August of this year, 6.1 percent higher than a year earlier. During the same period, hourly earnings of persons employed by food wholesalers rose 7.0 percent to \$3.22 per hour, and earnings of persons employed in retail food stores rose 6.3 percent to \$2.71 per hour.

Hourly earnings of employees in establishments manufacturing and retailing nonfood farm products also have increased substantially in recent years. In 1969, hourly earnings of persons employed by retail apparel stores and firms manufacturing textile mill products, apparel and related products, and tobacco products rose between 5 and 6 percent. Earnings are continuing to rise this year at about the same rate (table 5).

Since wage contracts of employees often extend over several years and contain provisions for successive annual wage increases, hourly earnings probably will keep rising into 1971. The effect this will have on marketing charges for agricultural products will be influenced to a considerable extent by gains in productivity.

Productivity: Output per man-hour slackened sharply throughout the economy in 1969 but an improvement is indicated for 1970. Figures published by the Department of Labor showed an increase of only 0.4 percent in output per man-hour in the nonfarm economy last year, the smallest gain since 1956. This resulted in a substantial rise in unit labor costs and the general level of prices of goods and services.

Recent estimates of output per man-hour in food marketing are only available for food manufacturing (table 6). From 1968 to 1969, output per man-hour in factories manufacturing farm-originated food products declined 0.8 percent as a result of a greater increase in man-hours worked than in output. Since hourly earnings of employees went up, labor costs per unit of output in food manufacturing probably rose substantially last year. Wholesale prices of processed foods rose nearly 5 percent.

Table 4.--Hourly earnings of employees of firms marketing food, annual 1957-69, monthly 1969-70

Year and month	Manufacturers	Wholesalers	Retail food stores	All food marketing <u>1/</u>
	<u>Dollars</u>			
1957	1.85	1.82	1.54	1.75
1958	1.94	1.89	1.59	1.82
1959	2.02	1.97	1.60	1.88
1960	2.11	2.03	1.68	1.96
1961	2.17	2.09	1.76	2.03
1962	2.24	2.16	1.83	2.10
1963	2.30	2.23	1.90	2.16
1964	2.37	2.28	1.98	2.23
1965	2.43	2.36	2.06	2.30
1966	2.52	2.49	2.13	2.40
1967	2.64	2.66	2.23	2.52
1968	2.80	2.83	2.38	2.67
1969	2.95	3.00	2.54	2.84
1969				
January	2.91	2.93	2.46	2.77
February	2.91	2.97	2.50	2.79
March	2.93	2.97	2.51	2.81
April	2.94	2.98	2.52	2.82
May	2.95	2.99	2.54	2.83
June	2.95	2.97	2.54	2.83
July	2.97	2.98	2.56	2.84
August	2.94	3.01	2.55	2.83
September	2.96	3.05	2.57	2.86
October	2.97	3.03	2.59	2.86
November	3.00	3.08	2.61	2.89
December	3.04	3.07	2.59	2.91
1970				
January	3.08	3.14	2.62	2.94
February	3.08	3.16	2.64	2.96
March	3.10	3.17	2.65	2.97
April	3.12	3.17	2.67	2.99
May	3.16	3.21	2.69	3.02
June	3.15	3.18	2.68	3.01
July	3.16	3.18	2.69	3.02
August	3.12	3.22	2.71	3.01
September	3.18			

1/ Weighted composite earnings of production employees in food manufacturing and nonsupervisory employees in wholesale and retail food trades calculated by the Economic Research Service from data of the U.S. Dept. of Labor.

Table 5.-Hourly earnings of employees of firms marketing nonfood agricultural products, annual 1957-69, monthly 1969-70 ^{1/}

Year and month	Manufactures			Retail apparel and accessories stores
	Tobacco	Textile-mill products	Apparel and related products	
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^{1/} U.S. Department of Labor; production workers or nonsupervisory workers only.

Table 6.--Output per man-hour in establishments manufacturing farm-originated foods, by industry, 1960-69 1/
(1957-59=100)

Year	Output	Man- hours	Output per man- hour	Output	Man- hours	Output per man- hour	Output	Man- hours	Output per man- hour
	All Foods <u>2/</u>			Meat products <u>3/</u>			Poultry and eggs <u>4/</u>		
1960..	107	99	108	107	97	111	109	105	104
1961..	110	98	112	108	93	116	129	114	114
1962..	114	97	118	110	92	120	128	107	120
1963..	116	94	124	116	91	128	134	113	119
1964..	122	96	127	124	97	129	141	116	122
1965..	123	94	131	121	90	134	150	120	125
1966..	126	93	135	126	88	143	163	126	129
1967..	129	93	139	132	90	147	176	137	129
1968..	132	92	144	135	90	150	170	136	125
1969..	133	93	143	135	90	151	180	151	119
	Dairy products <u>5/</u>			Processed fruits and vegetables <u>6/</u>			Grain-mill products <u>7/</u>		
1960..	104	96	108	112	103	109	109	101	108
1961..	106	94	112	121	104	116	114	100	114
1962..	108	91	119	130	104	125	119	99	120
1963..	110	86	127	126	102	123	125	93	135
1964..	113	86	131	135	104	129	129	94	137
1965..	113	83	136	142	108	132	128	93	138
1966..	113	81	140	150	111	135	132	92	143
1967..	112	77	146	156	112	139	132	93	142
1968..	112	74	151	165	112	148	137	95	144
1969..	111	72	155	161	117	138	138	96	143

1/ Output per man-hour indexes were computed from unrounded indexes of man-hours worked by all employees and factory output. Man-hour estimates for 1960-67 are based on data published by the Bureau of Census. Estimates for 1968 and 1969 were interpolated from employment statistics published by BLS. Output estimates are based on value added indexes published by the Bureau of Census projected for non-census years by physical output data published by the USDA. Data for 1964-69 are preliminary. 2/ Establishments primarily engaged in manufacturing shortening and cooking oils, margarine, macaroni, and spaghetti, as well as industry groups shown on this table. 3/ Meat-packing plants and establishments specializing in prepared meat products. 4/ Poultry-dressing plants and establishments specializing in processed egg products. 5/ Plants engaged in processing fluid milk and cream, butter, natural cheese, concentrated milk, ice cream and ices, and special dairy products. 6/ Establishments primarily engaged in canning and freezing fruits and vegetables and manufacturing pickles and sauces. 7/ Establishments primarily engaged in manufacturing flour and meal, cereal products, rice milling, blended and prepared flour, and corn wet milling products. (Continued)

Table 6.--Output per man-hour in establishments manufacturing farm-originated foods, by industry, 1960-69--Continued
(1957-59=100)

Year	Output	Man- :hours:	Output : per man- : hour	Output	Man- :hours:	Output : per man- : hour	Output	Man- :hours:	Output : per man- : hour
	Bakery products <u>8/</u>			Sugar <u>9/</u>			Confectionery <u>10/</u>		
1960...	104	101	103	110	99	111	107	99	108
1961...	105	99	106	118	102	115	110	100	110
1962...	108	98	110	123	98	126	111	101	110
1963...	110	92	120	145	107	135	116	96	122
1964...	113	92	122	151	116	131	121	98	123
1965...	115	91	126	140	108	130	124	98	126
1966...	115	90	127	143	105	136	131	99	132
1967...	115	86	135	140	104	135	134	101	133
1968...	117	85	137	161	108	149	139	99	140
1969...	120	85	141	165	119	139	138	99	139

8/ Establishments primarily engaged in manufacturing biscuits and crackers, whole-sale bakeries, grocery chain bakeries, home service bakeries, and retail multi-outlet bakeries (excluding nonbaking outlets except those retail units at the same location as the bakery). 9/ Establishments primarily engaged in manufacturing raw cane sugar from domestically grown cane and plants mainly engaged in the production of beet sugar. 10/ Establishments primarily engaged in manufacturing candy and other confections.

Over most of the past decade, marketing firms have been able to partially offset rising hourly earnings and other labor costs by increasing output per unit of labor. From the base period, 1957-59 to 1969, labor costs per hour (wages, salaries, and fringe benefits) rose 67 percent. 1/ Because of gains in productivity, however, labor costs per unit rose only 34 percent. Most of the increase in unit costs has occurred since 1964.

Transportation Charges

The combined index of railroad freight rates for all agricultural commodities averaged 91 in 1969 (1957-59=100) up 2 points from 1968. A similar 2 point increase occurred in a combined index of rates for food products, increasing from 91 to 93. Each index continued an upward trend that began in the late 1960's, after several years of decline (table 7).

1/ This increase in labor cost per hour is greater than the increase of 56 percent in average hourly earnings shown in table 4. This difference arises mainly because labor costs per hour includes fringe benefits, earnings of workers in away-from-home eating places, and earnings of nonproduction workers in food-manufacturing establishments and supervisory workers in wholesale and retail food establishments.

Table 7.--Railroad freight rate indexes for specified agricultural commodities, 1957-69 1/

(1957-59=100)

Year	Livestock	Meat	Fruits and vegetables	Wheat	All grains
1957.....	98	109	104	99	99
1958.....	102	100	101	101	102
1959.....	100	92	95	100	99
1960.....	99	92	93	99	98
1961.....	98	92	94	99	97
1962.....	96	91	93	96	96
1963.....	94	89	92	95	94
1964.....	93	86	92	92	92
1965.....	93	79	92	83	86
1966.....	93	76	92	82	85
1967.....	94	76	93	83	85
1968.....	98	78	96	84	85
1969.....	102	81	100	85	85
	Soybeans	Cotton	Wool	Tobacco	Combined index
					Food : All
					products <u>2/</u> : products <u>3/</u>
1957.....	97	100	106	108	102
1958.....	102	101	108	101	102
1959.....	101	100	85	91	96
1960.....	101	99	82	90	95
1961.....	96	99	82	91	95
1962.....	94	99	72	91	93
1963.....	89	99	70	91	92
1964.....	88	98	67	91	92
1965.....	87	98	67	91	88
1966.....	87	98	67	90	88
1967.....	88	98	67	91	88
1968.....	89	98	68	93	91
1969.....	91	101	71	98	93

1/ All indexes are of the weighted aggregative type and are based upon averages of rates in effect during the year. Annual averages are computed by weighting rates by the number of days they are in effect.

2/ In constructing the all farm food index, food product groups are weighted by average quantities marketed domestically in 1957-59.

3/ In constructing the all farm product index, farm product groups are weighted by average revenues for 1957-59.

Data for 1945-56 are published in the Marketing and Transportation Situation, MTS-47, November 1962.

With the exception of the grain index, which remained unchanged, indexes of rates for all commodity groups increased from year-earlier levels. The index of tobacco rates increased 5 points, while 4-point increases were registered by indexes for livestock and fruits and vegetables.

Increases basically reflected general rate increases granted by the Interstate Commerce Commission. Ex Parte 259 granted in November 1968 permitted increases of 3 to 10 percent that were effective in 1969. An additional 6 percent increase was approved (Ex Parte 262) in November 1969.

Other Costs

In addition to labor and transportation services, a wide variety of other costs are incurred by marketing agencies. These include costs of containers and packaging materials, office supplies, rent, property insurance and maintenance, and utilities. The importance of these items is much greater for some marketing firms than for others. For example, container costs for some canned fruits and vegetables and breakfast cereals are nearly equal to the cost of labor employed by firms processing these products.

Prices of intermediate goods and services (excluding raw materials) bought by food marketing firms will probably average 5 to 6 percent higher this year than in 1969, a slightly larger increase than in past years. In the first 9 months of 1970, prices of containers and packaging materials averaged about 4 percent higher than a year earlier (table 8). Fuel, power, and light costs or rates, however, jumped 11 percent, an increase more than double the total increase in these prices the past decade. Prices of services (such as rent, insurance, and telephone) usually rise much more than prices of goods and materials; they rose about 7 percent in the first 9 months this year.

Between 1957-59 and 1969, prices of intermediate goods and services rose 25 percent. Over half of this increase

occurred after 1965. Prices of services increased 46 percent while prices of goods increased 12 percent.

Interest on short-term loans to business firms in 35 centers declined slightly this year from 8.86 percent in February to 8.50 percent in August, reversing the upward trend of interest rates in recent years. Short-term rates averaged 6.68 percent in 1968 and 8.21 percent in 1969. Yields of long-term bonds also increased in 1969.

Corporate Profits

Food Manufacturers and Retailers:

While costs have risen, profit ratios of food marketing firms have held relatively stable. Profits after taxes of corporations manufacturing food and kindred products (excluding alcoholic beverages) averaged 2.4 percent of sales between 1967 and 1969. Return on stockholder equity rose very slightly in 1969. In the first half of this year, profit ratios of food manufacturers averaged slightly lower than a year earlier (table 9).

Profits after taxes of 15 leading retail food chains averaged 1.1 percent of sales between 1967 and 1969 but declined to 1.0 percent the first half of this year. However, profits as a percentage of stockholder equity rose slightly in 1969.

Manufacturers of Nonfood Products:

Profits as a percentage of sales declined in three principal industries manufacturing nonfood agricultural products in 1969. Profits of textile manufacturers averaged 2.9 percent of sales, down from 3.1 percent in 1968. Profits of apparel manufacturers declined slightly to 2.3 percent, while the profit margin of tobacco manufacturers dropped from 5.5 to 5.2 percent.

Profits as a percentage of stockholder equity of textile and apparel manufacturers also declined last year and averaged slightly lower in the first half of 1970 than a year earlier. Tobacco manufacturers, however, earned a slightly higher profit on stockholder equity in 1969 and the first half of 1970.

Table 8.--Prices of inputs bought by food marketing firms, annual 1957-69, quarterly 1969-70

(1957-59=100)

Year and quarter	Intermediate goods and services					New plant and equipment	Yields on high-grade long-term bonds, per annum <u>4/</u>
	Total	Goods			Services		
		Total	Containers and <u>1/</u> packaging materials	Fuel, power, and light			
					<u>2/</u>		
							Percent
1957.....	98	99	99	102	97	98	3.89
1958.....	100	100	101	99	100	100	3.79
1959.....	102	101	100	100	103	102	4.38
1960.....	103	102	102	102	105	103	4.41
1961.....	104	102	101	104	106	103	4.35
1962.....	104	101	102	103	108	104	4.33
1963.....	104	100	101	102	110	105	4.26
1964.....	106	100	101	102	114	106	4.40
1965.....	108	102	102	102	118	108	4.49
1966.....	112	104	106	103	123	110	5.13
1967.....	116	106	107	104	130	114	5.51
1968.....	120	108	111	103	137	117	6.18
1969.....	125	112	115	105	146	123	7.03
<u>1969</u>							
Jan.-Mar. ...	123	111	114	104	142	121	6.70
Apr.-June...	124	112	115	104	144	122	6.89
July-Sept. ..	126	112	115	105	147	124	7.06
Oct.-Dec. ...	127	113	116	108	149	125	7.47
<u>1970</u>							
Jan.-Mar. ...	129	115	118	110	151	127	7.89
Apr.-June...	131	117	119	116	153	128	8.14
July-Sept. ..	134	119	120	122	157		

1/ Also includes prices of office supplies, restaurant supplies, and many other goods.

2/ Rent, property insurance and maintenance, telephone, etc.

3/ Implicit price deflator for investment in nonresidential structures and producers' durable equipment, U.S. Dept. of Commerce.

4/ Aaa corporate bonds; Moody's Investor Service. These yields are indicative of the cost of current long-term borrowings.

Table 9.--Profit ratios (after Federal income taxes) of manufacturers of food, textiles, apparel and tobacco, and 15 retail food chains, annual 1959-69, quarterly 1969-70

Year and quarter	Manufacturing corporations <u>1/</u>				15 retail food chains <u>3/</u>
	Food <u>2/</u>	Textile-mill products	Apparel and other finished products	Tobacco	
Profits as percentage of stockholders' equity					
1959.....	9.6	7.5	8.7	13.5	13.4
1960.....	9.2	5.8	7.7	13.5	13.0
1961.....	9.4	5.0	7.3	13.8	12.0
1962.....	9.2	6.2	9.3	13.2	11.7
1963.....	9.3	6.1	7.7	13.4	11.4
1964.....	10.4	8.6	11.9	13.4	11.5
1965.....	11.0	10.9	12.8	13.4	11.3
1966.....	11.5	10.3	13.8	14.3	11.4
1967.....	11.1	7.6	12.2	14.6	10.3
1968.....	10.9	8.8	13.0	14.2	10.3
1969.....	11.0	7.9	11.9	14.5	10.4
1969					
Jan.-Mar. ...	10.1	7.2	10.3	12.1	---
Apr.-June...	11.0	8.8	11.4	14.8	---
1970					
Jan.-Mar. ...	10.2	5.4	8.3	13.7	---
Apr.-June...	10.4	4.8	7.2	15.0	---
Profits as percentage of sales					
1959.....	2.3	3.0	1.5	5.4	1.3
1960.....	2.2	2.5	1.4	5.5	1.3
1961.....	2.2	2.1	1.3	5.7	1.2
1962.....	2.2	2.4	1.6	5.7	1.2
1963.....	2.2	2.3	1.4	5.9	1.2
1964.....	2.5	3.1	2.1	5.9	1.3
1965.....	2.6	3.8	2.3	5.9	1.2
1966.....	2.5	3.6	2.4	5.9	1.2
1967.....	2.4	2.9	2.3	5.9	1.1
1968.....	2.4	3.1	2.4	5.5	1.1
1969.....	2.4	2.9	2.3	5.2	1.1
1969					
Jan.-Mar. ...	2.3	2.7	2.2	4.6	1.1
Apr.-June...	2.4	3.2	2.2	5.2	1.2
1970					
Jan.-Mar. ...	2.2	2.1	1.7	5.4	1.1
Apr.-June...	2.2	1.8	1.5	5.4	1.0

1/ Compiled from Quarterly Financial Report for Manufacturing Corporations published by the Federal Trade Commission and Securities and Exchange Commission.

2/ Food and kindred products excluding alcoholic beverages.

3/ Compiled from Moody's Industrial Manual.

RECENT DEVELOPMENTS IN MARKETING

Farm Marketings and Output

The volume of products marketed by farmers this year is running slightly ahead of last year's volume. Marketings during the first 8 months this year averaged about 1 percent larger, and the total for the year is likely to be larger than last year's volume. Increased marketings have drawn down stocks of some crops; output of farm products in 1970 is expected to total about the same as last year. Some decline is expected in crop production. However, output of livestock and livestock products may increase around 5 percent.

Manufacturers' Output and Retail Sales

Output of products manufactured from farm-produced raw materials has shown a mixed pattern this year. Production of the food manufacturing industry, as measured by the Federal Reserve Board index, averaged 2.6 percent larger in the first 7 months of 1970 than in the like period of last year. Output of the tobacco industry was up 2 percent. In contrast, during the first 6 months this year, output fell in the textile mill and apparel industries by 3.4 and 5.4 percent, respectively, from a year earlier.

Dollar sales of both retail food stores and eating and drinking places in the first 7 months of 1970 totaled 7.5 percent higher than in the same period last year. Part of this increase resulted from higher prices. Grocery store prices rose 1.6 percent while prices of restaurant meals advanced 3.7 percent.

Exports of Farm Products

Exports of U.S. farm products rebounded sharply in fiscal year 1970. Record commercial sales for dollars pushed total agricultural exports to over \$6.6 billion, 16 percent higher than in fiscal 1969. Soybeans and products and feed grains contributed two-thirds of the overall gain. Agricultural exports to Japan reached a record of \$1.1 billion. This marked the first time that agricultural exports to a single market exceeded a billion dollars.

Commercial sales for dollars in fiscal 1970 totaled over \$5.6 billion, up sharply from \$4.7 billion the previous year. Besides soybeans and products, dollar sales were substantially higher for grains, tobacco, fruits, vegetables, and certain animal products.

Capital Expenditures by Marketing Firms

Expenditures for plant and equipment by firms manufacturing foods and beverages are expected to total nearly \$2.9 billion in 1970, according to surveys by the Office of Business Economics (OBE) and the Securities and Exchange Commission (SEC). This would total 10 percent more than 1969 and exceed considerably the capital spending rise of most other manufacturing industries. However, the physical volume of capital investment by food and beverage manufacturers will no doubt be less than the spending rise because of the steady rise in plant and equipment prices. In the second quarter this year, they were up 5 percent from 1969.

Plant and equipment expenditures of textile manufacturing firms are expected to total about \$0.6 billion this year, about 8 percent less than in 1969 and considerably below their record expenditure in 1966. Capital spending by railroads in 1970 will be near \$1.9 billion, about like last year. Expenditures by other transportation firms, excluding air, are expected to decrease a fourth this year to about \$1.3 billion, the least since 1961.

The series on expenditures shown in table 10 are revised estimates by the OBE-SEC. The revised estimates of expenditures by food and beverage manufacturers are substantially higher than the old estimates, whereas the revised estimates for textile producers are lower. OBE-SEC defines capital outlays as expenditures for plant and equipment for which companies maintain depreciation accounts.

Table 10.--Capital expenditures for new plant and equipment by firms manufacturing and transporting farm products, 1960-70

Year	Manufacturers		Transportation	
	Food and	Textile	Railroad	Non-rail
	beverage			excluding air
----- <u>Billion dollars</u> -----				
1960	1.34	0.37	1.16	1.30
1961	1.52	.33	.82	1.23
1962	1.51	.38	1.02	1.65
1963	1.53	.43	1.26	1.58
1964	1.72	.52	1.66	1.50
1965	1.83	.66	1.99	1.68
1966	2.10	.82	2.37	1.64
1967	2.08	.68	1.86	1.48
1968	2.21	.53	1.45	1.59
1969	2.59	.63	1.86	1.68
1970 <u>1/</u>	2.86	.58	1.86	1.26

1/ Estimates based on reports by business in late July and August 1970. Data from Securities and Exchange Commission and Office of Business Economics, Department of Commerce.

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STATUS AND ACHIEVEMENTS OF THE EXPANDED FOOD & NUTRITION EDUCATION PROGRAM

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: ABSTRACT: The primary objective of the Expanded Food and Nutrition Education :
: Program is to help low-income families acquire the knowledge, skills and changed :
: behavior necessary to achieve more adequate diets. At the end of June 1970, over :
: 7,000 nonprofessional aides were working with 237,000 families. Since the begin- :
: ning of the program about 348,000 families representing an estimated 1.7 million :
: persons have been enrolled in the program. Progress is reflected both in level :
: of nutrition knowledge and food consumption practices. Food readings taken of :
: homemakers in the program show that the proportion of homemakers with a minimum :
: adequate level of consumption rose from an initial 9 percent to 16 percent after :
: 6 months and 19 percent after 12 months. The proportion of homemakers consuming :
: one or more servings in each of the 4 basic food groups rose from an initial 56 :
: percent to 69 percent after 6 months and to 74 percent after 12 months. :
: KEY WORDS: Nutrition education, food consumption of low-income families, food :
: practices. :
:

Numerous surveys have revealed disturbing facts about the diets of the U.S. population. Generally the data show significant shortcomings in the diets of all income groups but particularly among low-income families. Lack of sufficient income to buy good nutrition is recognized as a major constraint. But the prevalence of poor dietary practices raises questions as to the efficiency and equity of our food marketing system and the ability and skills of consumers to acquire and use foods which provide the best nutrition.

Various approaches are being used to solve or alleviate food consumption problems of low-income people. Ways to improve the efficiency and responsiveness of food distribution in low-income urban areas are being sought. Eligible families are being helped through various forms of general economic assistance and public food assistance programs. Food and nutrition education is being offered from many sources to increase awareness of the need and essentials of good nutrition. While many of these approaches do not focus directly on marketing, all have significant implications to and potential impact on the food distribution system.

A current major effort by USDA is the Extension Service's Expanded Food and Nutrition Education Program. While food and nutrition education has always played a major role in the agency's program, new dimensions and emphasis are reflected in the expanded program authorized in November 1968. These changes include orientation of the program toward hard-to-reach families in poverty of which a large proportion are of minority groups living in urban areas. Also in contrast to traditional programs where professionals are the main source of contact with clients, nonprofessionals (aides) are depended upon to deliver this program.

Program Objectives

The primary objective of the Expanded Food and Nutrition Education Program is to help families in poverty acquire the knowledge, skills, and changed behavior necessary to achieve adequate diets. More specific goals are: to increase families' knowledge of the needs and essentials of good nutrition; to improve their ability and practices in selecting and buying foods and preparing and serving them in nutritional and palatable meals; to develop

improved food handling and sanitation practices; and to enhance participating families' ability to secure and manage their resources so as to realize maximum value and satisfaction. Supportive objectives include increased participation of eligible families in USDA food programs and other forms of public assistance which may be available in the community. Although the program is oriented to nutrition education, it recognizes that other problems in family living must be identified and dealt with if these families are to acquire improved nutrition practices.

Operating funds for the program are allocated to the State cooperative extension services primarily on the basis of the percent of the total U.S. poor in each State. Except for funds ear-marked for hiring professionals to supervise or direct 4H type work with youth, the major use of funds is restricted to salaries and support of nonprofessional aides. Field implementation began in early 1969 through the State cooperative extension services.

Management and Evaluation Information

Before the program began, an information system was developed to provide data for management direction and evaluation. The base of this information system is provided by the aide's records on each participating family. Information is obtained on socio-economic and other characteristics of the family and nutrition knowledge and food consumption practices of the homemaker of families as they enter the program and at intervals as they participate.

The primary purpose of the information system is to help the aide and program management identify a family's needs, the resources available to the family, and the achievement of the family in respect to the program goals. In addition, each program unit periodically summarizes and reports to the Extension Service selected data which reflect program status in terms of the profile of families being reached and achievements of families in terms of change in nutrition knowledge and food consumption practices of program family homemakers. Such data are now available for examining program performance through March 1970.

While a comprehensive evaluation of family achievement requires identification of the response of individual families, aggregative data accurately reflect who is being reached and the level and rate of change in families' food consumption practices.

Program Scope

At the end of June 1970, over 7,000 aides were working with 237,000 families. Since the beginning of the program about 348,000 families including an estimated 1.7 million persons have been enrolled and more than 11,000 aides have been trained and have worked with these families. Most families are worked with on an individual basis. However, the number of families being taught in groups has increased significantly. In addition to the program families, an average of 39,000 nonprogram families have been contacted or worked with each month by the aides for a cumulative total of 667,000 through June 1970. At the end of June, a full-time equivalent aide was responsible for an average of 46 program families and had contacted 12 nonprogram families during the month.

At the end of June the program was operating in more than 900 counties, independent cities and Indian reservations in all of the 50 states, District of Columbia, Puerto Rico, and the Virgin Islands.

In addition to involving a large number of people, the program has reached its target population--hard to reach families in poverty. As of March 1970, over 60 percent of the program families, averaging about 4.8 persons, reported annual incomes of less than \$3,000. Three out of 10 families received public assistance and 4 out of 10 participated in USDA food programs. Similarly the program has been successful in moving into urban areas and involving minority groups. About 60 percent of families lived in urban areas while less than 10 percent lived on farms. About 30 percent of the families were Caucasian. Over 30 percent of family homemakers reported less than an 8th grade education.

Families participating in the program at the end of March 1970 contained close to 600,000 children. In addition to being reached through their family's involvement in the program, youth also are being taught through 4H type activities. Over 110,000 youth (generally 9 to 19 years of age)--about half from program families--were involved in the 4H youth component during June 1970.

With the exception of a rise in the proportion of families with annual incomes of over \$3,000, the profile of program families has not changed significantly over the reporting periods shown in table 11. This shift appears primarily to reflect income status of families added as the program expanded rather than that of families leaving the program. However, a continuing orientation of the program to low income families is indicated by the fact that in all reporting periods less than 9 percent of the families had incomes of \$5,000 and over.

Nutrition Knowledge and Food Consumption Practices

Information obtained from homemakers at 6-month intervals provides an aggregative view of the level of nutrition knowledge and food consumption practices of homemakers as they enter and continue in the program (table 12).

Through March 1970 initial food readings have been obtained on over 215,000 homemakers. These show that only 9 percent of homemakers entering the program reported consumption of the recommended minimum number of servings of food in each of the 4 major food groups (2 each of milk and meat and 4 each of vegetables/fruit and breads/cereals) considered essential for an "adequate" diet. Only 56 percent of the homemakers reported at least 1 serving each of the 4 food groups during the 24-hour recall period. More specifically, initial food readings showed that 32 percent of the homemakers did not consumer any milk products and 13 percent no vegetables and fruits.

Initial responses to the question "What food and drink do you think people should have to keep healthy?" found less

than half of the homemakers naming a food in each of 4 basic food groups.

Program Results

Changes in the level of nutrition knowledge and consumption practices of homemakers are reflected in second and third food readings taken after 6 and 12 months of program participation. Note that the readings were not obtained on all family homemakers and, more importantly, that families left the program between scheduled readings. Neither the characteristics nor nutritional status of these families or homemakers can be determined from the aggregative data reported. However, the profile of participating families has not changed significantly, indicating that families who have left were not confined to any special group or characteristic.

Food readings taken of homemakers in the program for 6 months show that the portion of homemakers with a minimum adequate level of consumption rose to almost 16 percent and after 12 months to over 19 percent from the initial 9 percent.

The proportion of homemakers reporting one or more servings in each of the 4 food groups rose from an initial 56 percent to 69 percent after 6 months and to 74 percent after 12 months. Only 17 percent of the homemakers who had been in the program a year failed to consume milk products in the 24-hour recall period in contrast to 32 percent when entering the program. Progress is also indicated by a decline in the proportion of homemakers not consuming vegetables and fruits.

Improvement among homemakers in the recognition of need and essentials for proper nutrition is indicated by the fact that after a year in the program 7 out of 10 indicated that for a good diet, foods in all food groups should be consumed.

To give access to more food or more resources for acquiring their food needs, program families, if eligible, are encouraged to participate in USDA food assistance programs. Success in this area appears to be mixed. Prior to January 1970 the combined monthly rate of participation

Table 11.--Profile of families and aides participating in the Expanded Food and Nutrition Education Program

Program families <u>1/</u>	March 1969	September 1969	March 1970
	<u>Number</u>		
Participating <u>2/</u>	54,223	138,666	204,475
Persons in families	324,404	657,097	981,874
Children in families <u>3/</u>	NA	NA	584,905
Average size of families	4.7	4.7	4.8
Cumulative program families <u>4/</u> ...	71,507	184,279	291,758
	<u>Percent</u>		
Characteristics of families			
Annual income			
Less than \$1,000	24	19	16
\$1,000-2,999	47	46	47
\$3,000 and over	29	35	37
Ethnic grouping			
Caucasian	29	33	33
Negro	54	50	48
Spanish-American	14	15	17
Other	3	2	2
Residence			
Urban	53	59	59
Rural nonfarm	36	32	33
Farm	11	9	8
Receiving welfare	29	32	32
Education of homemaker less than 8th grade	34	32	34
Participating in USDA food programs			
Food Stamps	14	15	18
Donated Foods	24	23	23
Total	38	38	41
	<u>Number</u>		
Program aides			
Employed <u>5/</u>	3,591	4,314	6,886
Full-time equivalents	2,966	3,262	5,379
Ethnic grouping		<u>Percent</u>	
Caucasian	40	39	43
Negro	47	48	43
Spanish-American	11	11	11
Not identified	2	2	3

1/ Program families include only those for which specified classification information was obtained.

2/ Number of families participating as reported at end of each month. In June 1970 there were 237 thousand.

3/ Includes children through 19 years of age in program families.

4/ Includes families who participated in the program but left between reporting periods. Does not include a large number of families who were contacted by aides each month but were not enrolled in the program at the end of the month.

5/ Represent total number of trained aides working. Full time equivalents are based on 40 working hours per week.

Table 12.--Proportion of homemakers consuming selected foods during a 24-hour period and average family income and food expenditures, 6 month intervals of participation in the Expanded Food and Nutrition Education Program through March 1970

Item	Homemakers reporting by food record number <u>1/</u>		
	1	2	3
	----- <u>Number</u> -----		
Homemakers reporting	215,453	90,682	27,479
	----- <u>Percent</u> -----		
Servings of food consumed			
Milk			
0	32.1	21.4	17.2
1 or more	67.9	78.6	82.8
2 or more	36.2	48.6	53.9
Meat			
0	5.4	3.7	2.7
1 or more	94.6	96.3	97.3
2 or more	75.0	80.1	84.5
Vegetables and fruit			
0	13.1	6.9	6.5
1 or more	86.9	93.1	93.5
4 or more	18.0	28.0	30.6
Breads and cereals			
0	3.3	1.9	1.2
1 or more	96.7	98.1	98.8
4 or more	35.7	44.8	50.2
1 or more, each food group	56.0	69.2	74.0
2 or more, milk and meat and 4 or more, vegetables/fruit and breads/cereals	9.0	15.6	19.4
	----- <u>Dollars</u> -----		
Family characteristics			
Average monthly income	234	241	236
Average monthly food expenditures ...	82	85	83

1/ Food records are combined by number, irrespective of date taken. Food record number one represents all initial food readings and records 2 and 3 reflect 6 and 12 months respectively of program participation. Food records are summarized and reported semiannually, March 31 and September 30, by each program unit.

in the Food Stamp and Donated Food Programs held at about 38 percent of the program families. However, during the current calendar year participation in USDA food programs has been rising; as of June 1970, 43 percent of the program families were participating. This rise appears to have been supported by increased availability of USDA food programs as well as more liberal purchase requirements for Food Stamps.

Since food readings of the family homemaker show only the number of times a food was eaten during a 24-hour period, certain limitations must be recognized in the interpretation and use of both individual records and summary data. Obviously, an exact measure of quantity consumed is not provided in the food recall, and in classifying an individual food, recognition is not given to variation in quality or nutrition value.

Despite these limitations, the individual food record, in context with other information on the family and observations based on the personal experience of the aide, provides a meaningful way of identifying poor nutrition practices and measuring change associated with the program educational effort. Summarized data highlight food consumption problems common among program families and provide a realistic measure of relative change in behavior.

One of the most interesting facts about food consumption of low-income families shown by available food-reading data is that over three-fourths of the homemakers on entering the program reported 2 servings or more of meat during the 24-hour recall period, and 85 percent of the homemakers who had been in the program a year consumed meat at this level. These findings would appear to indicate that protein inadequacy may be less widespread among low-income families than suspected.

Similarly, summary data would appear to indicate that the greatest dietary weakness of program families is in consumption of vegetables and fruits. Also, this appears to be an area where progress may be slow. While most homemakers even in the first reading reported consumption

of breads and cereals, only 36 percent reported 4 or more servings during the first 24-hour recall. Initial food readings indicated that about a third of the homemakers did not consume any milk products and only slightly over a third consumed the minimum recommended, 2 servings daily.

Overall assessment of change in food consumption practices of program family homemakers indicates that greatest progress has been made in getting families to include at least one serving from each of the food groups. But substantial progress had been made in increasing the incidence of "adequate" diets among participating families.

In evaluating the effectiveness of the program, particularly in respect to the proportion of homemakers with adequate diets, it should be recognized that the application of the education and skills gained from this program may be limited by the food purchasing power available to the families. Homemakers for which food readings were obtained between September 1969 and April 1970 reported average monthly income of \$242 with food expenditures accounting for 35 percent or \$84. On a weekly basis this would reflect an average food expenditure of \$19.43 per family.

The Department estimates that in June 1970 the cost of its low-cost food plan for a family of four with school children was \$31.10. Since the average size of a program family is 4.8 persons, available income, and specifically that available for food, places a definite restraint on these families in acquiring the food necessary for an adequate diet.

Marketing Implications

Data available from the information reporting system does not permit a direct assessment of the program's impact on marketing. However, the implications to marketing are significant since the importance of improved food buying both in respect to nutrition and price is being emphasized and program aides are working

with families to develop such skills. Progress in these areas is likely to be reflected in changed shopping patterns. This would be in respect to stores patronized and frequency of purchase, and buying patterns in respect to brands as well as products included in the shopping lists. For example, in some areas where the program involves a substantial proportion of the population food retailers have experienced a substantial increase in the sale of non-fat dried milk. Success in bringing about increased participation of eligible families in the Food Stamp

Program will have direct impact on food sales.

Thus, findings as to consumption practices of families participating in the program are of major significance to the food distribution industry. The data can identify areas where the consumer needs assistance in the marketplace and offer opportunities for the industry to complement the program by providing consumers with information and services which will help them meet their food needs at the lowest possible cost.

FOOD PRODUCT DATING

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ABSTRACT: In response to a congressional request, an exploratory study was conducted to determine and summarize what is presently known about food product dating. In the past year, several bills have been introduced in Congress to require that packaged perishable foods bear labels specifying the date after which products should not be sold. Several retail chains have recently initiated open code dating programs and many processors are studying the possibility of open dating their products. The article discusses current industry practices on product dating, pros and cons of different open dating methods and selected findings of a Food Stability Survey made by Rutgers University. Also included are recommendations for further research that would help to determine consumer interest in and use of open dates, and the possible costs involved for the retailer.

KEY WORDS: Food product codes, product dating, open dating

In late 1969, legislation was introduced in Congress to amend the Fair Packaging and Labeling Act to require that packaged perishable foods bear labels specifying the date after which they are not to be sold for consumption. Several similar bills were introduced during the 2nd session of the 91st Congress, but hearings have not been held on any of them. In April 1970 the results of two limited retail surveys made in Washington, D.C. were released. The reports on both of these surveys charged that retailers were not rotating and removing stock and were thus selling a substantial amount of overage food. Since these findings were based on restricted samples, and little objective research data were readily available, the Chairman of the Special Consumer Inquiry of the House Special Studies Subcommittee wrote to Agriculture Secretary Hardin asking that USDA evaluate several aspects of food product dating.

In response to the Secretary's request for information, the Economic Research Service in late July began exploratory work on food product dating. When the preliminary investigations

were completed, ERS submitted a report of these findings to Congress. Included were recommendations for further research that would help to determine the consumer's interest in and possible use of open dates, as well as the scope of some of the concerns of the retailer and processor about different open dating techniques.

The first step of the ERS exploratory work was to determine industry practices regarding food product coding and code dating. Virtually every food product now on grocery store shelves has a code on it. The codes used are established by the processor and may provide various kinds of processing information, including some kind of date. Many codes give product identity and the plant--even the time of day or shift--where the product was processed. There normally is a code date representing the date of manufacture or final packaging, perhaps accompanied by an indication of a reasonable shelf life. Or there may be an expiration or "pull" date, after which the product should be removed from the retailers' shelves while still allowing for storage time in the home.

According to most food processors, product codes--including dates--are intended primarily as inventory and quality control devices. They enable the processor to identify the product and the source of its raw materials; they allow for stock rotation on a first-in, first-out basis; they enable the company personnel to withdraw overage products from the retail shelf; they help the company trace and handle consumer complaints; codes can be used to identify product lots if recall becomes necessary; and they make it possible to trace product movement in the marketplace.

Open dating of products is unusual at present. Six municipalities (New York City, State of New Jersey, Baltimore, St. Louis, Birmingham, and suburban Philadelphia) have ordinances requiring open dating of fresh milk. Although some States require that various foods be dated, these dates generally must only be legibly coded and are not intended for consumer use. Most refrigerated dough products, where yeast is an important quality factor, are open dated by the processor. A date is pressed into the can lid with a statement on the label saying "Perishable - Keep Under Refrigeration. For Best Results, Use Before Date on End of Can." This is about the only widely distributed product where an open date is used and explained by the manufacturer as an indicator of quality.

Rutgers Food Stability Survey

When the Economic Research Service began its exploratory work on food dating, very little pertinent research data were found. The most extensive research has been done by the Food Science Department of Rutgers University at the request of the State Department of Health after legislation similar to that later introduced in Congress was introduced in the New Jersey legislature. This study was commissioned in 1969 to ascertain which foods may be likely to be of low quality or to create a public health hazard if their shelf life expires before they are consumed, and what

effects, if any, open dating could have on reducing potential hazards.

The Rutgers study team began by looking at four quality areas: aesthetic, nutritional, microbial, and functional. Data from the National Communicable Disease Center showed that, even allowing for unreported cases, the causes of food poisoning in the United States are not generally due to the food processing industry. Since the product would usually become aesthetically unacceptable before becoming a health hazard, the research emphasized the relationship of other types of quality to the age of packaged foods. In fact, it did not go substantially beyond the area of aesthetic quality, which is defined as changes involving color, flavor, and texture--those aspects of food quality most subject to consumer evaluation.

The Rutgers study team began by reviewing the available literature on quality changes in food before, during, and after processing, as influenced by type of processing, packaging, shipping and handling, as well as the temperature and time of storage. Termination of shelf life was defined as the point at which some significant quality change (determined by scientific experts, not by consumers) takes place in the food at a given temperature.

In analyzing available scientific information on the shelf life of processed foods, Rutgers discovered it was not generally applicable to processed foods now on the market or to consumer package sizes in retail stores. For instance, although the Department of Defense has generated, for specific purposes, substantial quantities of information about the durability of foods at given temperature and time levels, these do not apply to general consumer marketing conditions.

Rutgers requested information from most major food processing companies and retail chains about their respective code dating methods, and their procedures for monitoring and retrieving stock from

consumer outlets. They also asked the processors to define the accepted shelf life of their products at various temperatures, the quality factor basis for such shelf life, and the standards and criteria used in determining unsalable merchandise. More than 100 processors cooperated, although the information on procedures varied considerably among companies. All cooperating companies applied quality control and dating systems and some were extremely sophisticated in their monitoring and retrieval practices.

In addition, a review was made of present legal requirements for dating of food products in the United States at the Federal, State and local levels and in foreign countries. Open dating of some food products is common in several European countries and experiences there with product dating were closely examined and documented in the report.

The general recommendations included in the Rutgers report are: (1) Food processors should mark all exterior cases or overwraps in English with the date of manufacture or date of final packaging to simplify inventory rotation, (2) a legible uniform manufacturers' code should appear on every purchase unit to facilitate identification and pickup if recall is necessary, (3) an open date of shelf display (month, day and year) should be stamped indelibly by the retailer on each unit of most foods for use by the consumer after purchase, (4) the food industry should give satisfactory guidance to consumers on home storage conditions and on the maximum length of time food items may be wisely stored before being used, and (5) sanitary requirements as expressed in the Food and Drug Administration's Good Manufacturing Practices should be extended from the processor's premises to all personnel, equipment, and facilities directly involved in food handling at all levels of the food marketing system.

The Rutgers study team has completed its research and submitted its findings and recommendations to the New Jersey

Department of Health. To make the substantial amount of information collected more widely available, USDA has agreed to publish the report early in 1971.

USDA Research

USDA's Agricultural Research Service, like the Department of Defense, has conducted research on the durability of foods under highly specific environmental conditions. The Western Utilization Laboratory of ARS has researched the shelf life of frozen foods. The impact of quality control during processing and distribution and its effect on the shelf life of meat products has also been studied by ARS researchers. Most of the research, like that done by the Department of Defense, was not oriented toward product dating but was concerned with product durability under various conditions.

Food Industry Attitudes on Open Dating

Since ERS became involved in the question of food product dating last summer, interest in open dating has been widespread in the food industry. During the past few months several retail food chains have begun programs of open code dating. One chain in Chicago is promoting freshness codes as a service to customers. Large placards are displayed in meat, dairy, delicatessen and snack departments explaining how to interpret the codes on private label products. In addition, at the service desk of each store, a code book is available which interprets the codes on many of the products carried in the store.

A chain in the Boston area announced that "Our Secret Code's no secret anymore" and now distributes small pamphlets explaining the codes on some of its own products, including fresh meats, delicatessen, dairy and bakery items. The pamphlets are available to shoppers in all stores, and although the number of items covered is not extensive, those that are explained are considered important in family food buying.

Many other chains in different parts of the country are trying other approaches. For instance, some divisions of a national chain have begun an advertising campaign to explain the dates on their private label products. Each week's ad features the date on a particular product--where it is on the package, how to read it, and what it means. Placards with similar explanations are placed in the appropriate departments in the stores.

In addition, some trade associations are encouraging their members to reevaluate their cryptic coding policies, with a view to open dating. Several have established study groups to look at the possibilities with regard to feasibility, usefulness, and costs. Many processors, on their own initiative, are taking a close look at the question of dating, and whether some kind of open date could provide genuinely useful information for the consumers. A few have publicly announced that they will begin to open date their products soon.

Pros and Cons of Open Dating

Opinions on open dating range from those who see code dates as top-secret management tools to those who recommend full disclosure of all possible product information on the label.

Advocates of open dating feel consumers are entitled to information on product freshness. Such information will help not only the shopper in the store, but also the homemaker storing and using the products in the home. Those in favor of open dates point out that the code now on the package--which the shopper sees and knows may include a date indicative of freshness--makes the consumer feel unsure and somewhat deceived. Proponents of open dating also point out that it would make the job of stock rotation and removal of out-of-date food much easier for the retailer.

Opponents retort that a readable date would not provide the consumer with any genuinely useful information. The

temperature conditions and general methods of handling a product, they point out, are more important quality determinants than time alone. They feel open dating would be costly because shoppers would search through products on the shelf to find the most recent date. This would cause acceptable products to be rejected--and eventually reach their expiration date--so that product waste would increase substantially. The increased waste due to selective buying would lead to higher food prices. They foresee more out-of-stock situations because retailers will place on the shelves only items bearing the same date--and they will not restock until what is on the shelf is completely sold or must be removed.

Open dating advocates do not see selective buying as a serious problem, once the shopper becomes accustomed to readable dates. Data from the Rutgers report on open dating experiences in Europe tend to substantiate this opinion.

Even if everyone involved in the food product dating question--manufacturers, retailers, consumers, and legislators--could agree that some kind of open date would be useful, there would remain the task of getting agreement on the type of date to be used. There are numerous possibilities, many of which are already in use as code dates. For example, some individuals favor the use of a date of manufacture or date of final packaging. This, they argue, would give a common ground for comparisons, but would not involve the manufacturer in making statements on how long his product should be on the shelf. Opponents of this type of date point out the difficulties involved with items seasonally packed or stored for a period of time before final packaging. Moreover, the typical consumer does not have the necessary technical expertise to judge what the shelf life of products should be. Variations in quality control could mean that the same product from different plants of the same company could have different shelf lives. For example, even though each

plant meets acceptable sanitary requirements, one that has newer, more sophisticated equipment might be better able to control bacteria and produce a product with a longer shelf life. Opponents claim any date in the past has a psychological disadvantage, so customers would be particularly inclined to search for the most recently dated product.

Another possibility is the use of an expiration date--the date after which a product should not be consumed. However, establishing such a date by law for any product is impossible because of shelf life variability and because the rate of quality loss typically is very gradual. It is not technically feasible to set a precise date after which significant quality changes would occur.

A retail "pull" date--after which the product must be removed from retail sales--is often suggested. Set by the processor, the "pull" date allows for adequate storage time in the home even if the item is purchased on the last acceptable day of sale. The drawback of this method could be a lack of understanding by shoppers of the home storage time allowed by the processor. If shoppers read the pull date as an expiration date, good quality products would be rejected and might have to be destroyed.

A more acceptable technique, suggested in the Rutgers report, is durability dating--that is, the provision of temperature and time guidelines to maintain optimum quality. For example, the refrigerated dough products mentioned earlier have a date stamped on the can lid and two statements on the label: "Perishable - Keep under refrigeration. For best results, use before date on end of can." This tells the consumer that, if the product is properly handled, it will be of high quality until the specified date. Beyond that date, the product will still be acceptable although it may no longer have optimum quality.

However the main objection to dating is the importance of product handling. For most foods, temperature is a far more important quality determinant than simple elapsed time. Some people feel that any date may actually be a false assurance of quality because if the product temperature has not been properly maintained in handling, the food will not be of good quality even if its "pull" date is still months away. Open dating advocates argue that a date should not mean a guarantee of quality; it is only a useful guide for the shopper both in the store and in the home, and a way of making the retailer's job easier.

ERS Findings

When ERS had completed the initial exploratory work on the open dating question, a report outlining the findings and recommending some further study was forwarded to Congress. The report noted that some resistance to a program of open code dating has centered around the costs involved for the retailer and the lack of information on benefits to and use by consumers. Thus, the report recommends as a first step in researching open dating that arrangements be made with a large retail chain actively involved in open dating to monitor and evaluate its program.

The research will obtain information on the following six points:

1. Determine the extent to which consumers examine open dates in making purchases of food products, especially selected semiperishable and perishable items.
2. Interview a selected number of customers to ascertain their interest in and reaction to open code dating as practiced by the chain organization.
3. Measure the quantity of products withdrawn from the shelves by the store organization because of expiration of the open date.

4. Quantify, where possible, any cost to the chain organization of open dating including such factors as loss of product, frequency of delivery, and labor cost involved in any particular aspect of open dating.
 5. Describe the arrangements prevailing between the chain organization and food processors for products removed from the shelf because of expiration of the date.
 6. Evaluate the acceptance and attitude of store personnel and chain store officials of open dating as a basis for efficient stock rotation.
- The research, as proposed, would probably cover at least a 3-month period and could be expanded to include more than one retail organization. The results should provide some indications of the usefulness and feasibility of open dating for both consumers and processors.

FOOD PRICES BEFORE AND AFTER DISTRIBUTION OF WELFARE CHECKS

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A recent USDA survey of food prices in stores located in low-income areas of seven cities revealed no identifiable pattern of price increases after the distribution of welfare checks. Though there were both increases and decreases, the total cost of approximately 3,900 items increased less than 0.1 percent between the first and second week of the survey, taken during a period of generally rising prices.

These findings are based on an analysis of prices paid for a selected list of food items purchased one week apart in a total of 261 stores in the seven cities--Washington, D.C., Jackson, Miss., Boston, Newark, Detroit, Cleveland, and Oakland. The survey was conducted in response to allegations that retail food stores in low-income areas increased prices each month at the time welfare checks were issued. The Department was concerned because any deliberate price increases coinciding with the distribution of welfare checks would adversely affect the food stamp program. ^{1/}

The seven cities were suggested by the Food and Nutrition Service which administers the USDA food programs. Except for Boston, which had a commodity distribution program, the cities were participating in the food stamp program. Dates of the survey were determined by the time of the month most checks were issued which, in all but one city, was around the first. In Jackson, Miss., checks were mailed on or about the 16th so the survey in this city was made in mid-June 1969.

Six or more sample areas of a minimum size of 10 blocks were randomly selected in each city and all stores within their boundaries located. A large majority of these were neighborhood stores and, in the total for the seven cities, they outnumbered supermarkets by about 3 to 1. Convenience stores and delicatessen types were of minor importance.

Sixteen kinds of food, selected from those frequently used by families, made up the shopping list. These included meats, canned vegetables and fruit, cereal and dairy products, and staples. Prior to the start of the survey, stores were visited to determine the brands and sizes carried. On the first shopping trip, the week before issuance of welfare checks, buyers had a specific list of items to purchase in each store but were allowed to change the brands and package size if the preferred ones were not available. Items purchased the first week became the shopping list for the same store, on the same day, the next week after issuance of welfare checks. At the time of the second visit, no changes in the list were permitted. If the specified item was not on the shelf, it was considered out of stock. Each trip to a particular store was made by a different buyer and all purchases were made without prior knowledge of store personnel.

Variations in Prices

Overall, only 14 percent of all items purchased changed price between the first and second shopping trip, with increases

^{1/} A complete discussion of the survey is available in the report, Food Prices Before and After Distribution of Welfare Checks...Low-Income Areas, Seven Cities, 1969, MRR 907, Econ. Res. Serv., U.S. Dept Agr. A statistical summary providing additional information on the procedures used and basic price data are available in report MRR 907-1.

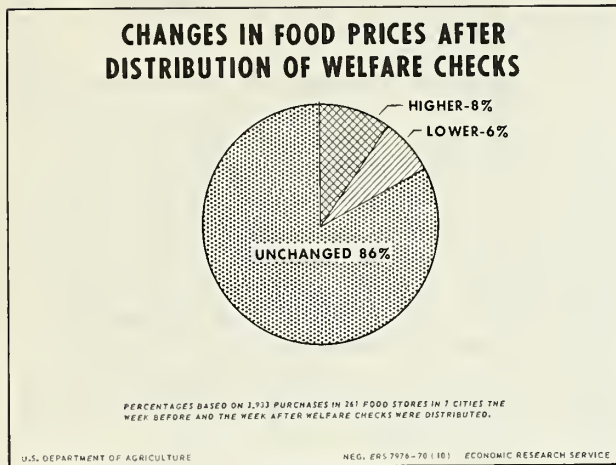


Figure 1

having a slight edge over decreases (Figure 1). Most changes were small, consisting mainly of increases or decreases of 1 or 2 cents. The net difference owing to all changes was an increase of 85 cents on a total bill of almost \$1,600 per week (table 13). Prices of fresh items--chicken, eggs, ground beef, and frankfurters--changed most often. Those changing least often included bread, rice, fruit cocktail, and flour.

About three-fourths of the 261 stores in the sample changed the price of one or more items between the first and second week. This varied somewhat among cities, ranging from about half the stores in Boston to nine out of ten in Detroit and Cleveland. A high proportion of supermarkets in the Cleveland sample and the fact that supermarkets tended to change prices on more items than did other types of stores may partly account for the higher figure in that city.

Of the 201 stores changing prices, about 40 percent had both increases and decreases. Slightly more than a third had increases only and the rest had decreases only.

Factors Contributing to Price Changes

A significant factor relating to price changes was whether items were individually price marked. The correlation between price marking and price changes was highly significant in all cities. In supermarkets, 15 percent of the items purchased were not price marked on both shopping trips and these items accounted for 25 percent of the price changes. In neighborhood stores, about

Table 13.--Summary of pricing survey in low-income areas before and after issuance of welfare checks, seven cities, 1969

Type of store	Stores in sample	Items purchased		Changes in prices week 1 to week 2		Expenditures		Net difference
		Week 1	Week 2	In-creases	De-creases	Week 1	Week 2	
			<u>1/</u>					
	<u>No.</u>	<u>No.</u>	<u>No.</u>	<u>No.</u>	<u>No.</u>	<u>Dol.</u>	<u>Dol.</u>	<u>Dol.</u>
Supermarket ...	61	1,384	1,259	100	57	503.26	504.74	1.48
Convenience ...	11	152	132	10	8	53.51	53.62	.11
Delicatessen ..	9	111	100	6	14	39.08	38.60	- .48
Neighborhood ..	180	2,727	2,442	198	169	997.72	997.46	- .26
Total	261	4,374	3,933	314	248	1,593.57	1,594.42	.85

1/ Difference between week 1 and week 2 represents out of stock.

half the items purchased were not price marked and around three-fourths of the price changes were on these.

A second factor responsible for some changes in prices was advertised "specials." Although Tuesday and Wednesday were the days selected for the survey to minimize the influence of these specials, some were in effect each week of the survey. Meats--chicken, frankfurters, and ground beef--made up a large share of the specials and accounted for some of the widest fluctuations in prices.

The effect of seasonal and general trends in prices was another factor. For example, during the survey in Washington, D.C., in April-May 1969, the price of eggs declined seasonally. In contrast, during a later period in Detroit and Cleveland, increases of 1 cent a quart on fresh milk went into effect August 1--between the first and second visits to these stores. And, with the exception of Oakland, the Consumer Price Index (CPI) for Food at Home was rising during the survey periods.

Cost of Identical Market Baskets

To ascertain the net effect of price changes, the amount paid for items purchased in each store was totaled by week. The result showed that the total cost was the same both weeks in about a fourth of the 261 stores. Of the remaining stores, 41 percent were higher the second week and 33 percent were lower.

Among individual stores, changes in total bills between the first and second weeks ranged from a decrease of 55 cents on an expenditure of \$8.14 to an increase of 42 cents on \$9.66. Approximately half the stores had differences of 5 cents or less, about equally divided between increases and decreases. Among stores having the largest differences, decreases outweighed increases. Several of these could be identified as resulting from specials in one of the weeks.

Miscellaneous Factors Affecting the Total Grocery Bill

Previous discussions of price changes were based on the amount charged for the same item week 2 compared with week 1. In addition to these variations in prices, errors made by the checker also affected the total bill. In general, these latter errors were of two types: (1) failure to charge the correct price--or any price--for an individual item, and (2) mistakes in figuring the total bill including addition errors, miscalculated sales tax, or an unaccounted for extra charge on the bill (table 14).

Inaccurate calculations of the cost of a single unit when items were multiple priced accounted for many errors. The incidence of this so-called "breakage" was highest in supermarkets and may have been due, in part, to more multiple pricing by the larger stores. The prevalence of these errors seemed to occur by stores--once started, the same clerk was likely to make more than one. Except for a few instances where the entire multiple price was charged for a single item, most of these errors amounted to 1 or 2 cents. Overall, "breakage" accounted for overcharges of \$1.06 compared with undercharges of 63 cents (table 15). Products most usually affected were evaporated milk, baby food, and green beans.

Many of the undercharges were due to the checker's failure to ring up an item and these errors were usually much larger than those resulting from breakage.

Each city had at least one instance of an error in addition or a charge on the bill which could not be identified. Detroit, Cleveland, and Oakland had only one of either kind. Newark had a noticeable error; a clerk in a supermarket failed to clear the cash register of the previous transaction, causing an overcharge of \$4.59. Boston had the largest share of errors on total bills with nearly all of these occurring in stores having handwritten bills instead of register or adding machine tapes. In the seven cities, these and similar errors

[illegible]

	<u>Number</u>													
Supermarket . . .	2,518	39	25	12	35	51	60	2,407	4	6	4	0	59	66
Convenience . . .	264	2	1	4	1	6	2	256	0	1	2	1	8	4
Delicatessen . .	200	0	1	0	5	0	6	194	0	0	1	0	1	6
Neighborhood . .	4,884	11	8	25	44	36	52	4,796	19	21	10	4	65	77
Total	7,866	52	35	41	85	93	120	7,653	23	28	17	5	133	153

1/ Errors made by checkers when item was multiple priced. Cost of one unit was figured by dividing price for multiples by number of units and raising this cost to the nearest whole cent. This was done when there was no evidence that one unit cost more than its share of the multiple.

2/ Total number of store bills = 522.

[illegible]

	<u>Dollars</u>												
Supermarket . . .	0.88	0.50	0.82	4.37	1.70	4.87	0.04	0.12	5.64	0	7.38	4.99	+2.39
Convenience . . .	.02	.01	.23	.33	.25	.34	0	.01	.42	.39	.67	.74	- .07
Delicatessen . . .	0	.01	0	.84	0	.85	0	0	.20	0	.20	.85	- .65
Neighborhood . .	.16	.11	1.83	7.28	1.99	7.39	.79	1.35	3.48	.15	6.26	8.89	-2.63
Total	1.06	.63	2.88	12.82	3.94	13.45	.83	1.48	9.74	.54	14.51	15.47	- .96

accounted for total overcharges of \$9.74 compared with undercharges of 54 cents.

Three cities had a sales tax on food and, in all three, errors were made in calculating the tax. In Washington, for example, there were 18 errors, only one of which--an undercharge--was made in a supermarket. All others--12 overcharges and 5 undercharges--occurred in neighborhood stores. In Jackson, there were 13 errors--mostly undercharges. Detroit had 8 overcharges and 12 undercharges. Nearly all such errors in the three cities were less than 10 cents; almost two-thirds were only 1 or 2 cents. Overall, total undercharges on taxes were nearly twice as large as overcharges. When all types of checker errors were considered, the net difference amounted to an undercharge of 96 cents.

As stated earlier, during the second week of the survey, buyers were instructed to purchase the same list of foods bought

the week before. No substitutions were allowed. If specified items were not available, they were reported out of stock. Overall, about 10 percent of the 4,374 items purchased during the first week were not on the shelf on the return trip. This pattern, however, varied somewhat by city, with Washington and Detroit having the largest and Oakland the smallest shares of items not available. Neighborhood stores were out of a slightly larger share (10 percent) of items than supermarkets (9 percent).

Washington, as a pilot city, may have had more items out of stock as the effect of late deliveries of perishable foods had not been fully anticipated. In the other cities, return visits the same day but by different buyers were required if a store was one of the first to be shopped in the morning. Because of a bakers' strike in Detroit, bread accounted for nearly half of the items out of stock.

SELECTED NEW PUBLICATIONS

1. "A Dynamic Price-Output Model of the Beef and Pork Sectors," by Richard Crom, U.S. Dept. of Agr., Econ. Res. Ser., Technical Bulletin 1426, September 1970.

A price-output model of the beef and pork sectors of the livestock meat economy has been successfully constructed and its ability to reproduce price and output decisions validated on the basis of quarterly data of the 1955-70 period. By altering its structure, the model may be used in either of two ways: (1) to project prices and outputs to future periods, and (2) to simulate the results of the imposition of policy constraints over either the historical or projection period. The model portrays economic activity satisfactorily, providing the quarterly data of the historical period are reproduced with acceptable accuracy.

2. "Cotton Gin Operating Costs in West Texas---1968-69" by Charles A. Wilmot, Dale L. Shaw, and Zolon M. Looney, U.S. Dept. of Agr., Econ. Res. Ser., MRR-903, September 1970.

This report, the third in a series, analyzes gin operating costs in West Texas in 1968-69. The gin sample from which these data were obtained is stratified by rated hourly capacities into four size groups. Capacity utilization rates and ginning volumes in West Texas gins were higher in 1968-69, compared with 1967-68, while per bale operating costs were generally lower.

3. "Food Prices Before and After Distribution of Welfare Checks...Low-Income Areas. Seven Cities, 1969," by Eileen F. Taylor, U.S. Dept. of Agr., Econ. Res. Ser., MRR-907, September 1970 and a statistical summary, MRR 907-1, October 1970.

These reports provide the results of a survey conducted by USDA in response to allegations that retail food stores operating in low-income areas raise prices to coincide with the issuance of welfare checks. (For major findings, see article in this report.)

4. "Marketing Economics Research Publications--A Reference List", Marketing Economics Division, U.S. Dept. of Agr., Econ. Res. Ser., ERS-205 (Rev.) February 1970.

This publication lists marketing economics reports published between 1960 and December 1969. Included are reports put out by the Department and by cooperating land-grant colleges and universities. Also listed are reports prepared by private institutions and published cooperatively or under contract with the Department.

5. "Prices and Spreads for Potatoes, Sweetpotatoes, and Other Selected Vegetables Sold in Fresh Markets, 1962/63 - 1966/67" by Victor G. Edman and Alfred J. Burns, U.S. Dept. of Agr., Econ. Res. Ser., MRR-901, September 1970.

This report contains monthly and seasonal data on prices and price spreads for 15 commodities sold fresh in selected major markets during the period 1962/63 - 1966/67.

6. "Sector Income and Employment Multipliers: Their Interactions on the National Economy" by Robert H. Elrod and Preston E. LaFerney, U.S. Dept. of Agr., Econ. Res. Ser., Technical Bulletin 1421, July 1970.

A workable input-output methodology for generating multipliers for sectors of the national economy in 1967 is presented. This methodology has not been previously employed on a national input-output level due to the lack of an enclosed household sector. A method was found for breaking out the household sector and enclosing it into the endogenous portion of the 1967 transactions table built for this report.

7. "Soybeans and Cottonseed Oils Used in Shortening and Salad and Cooking Oils: Trends---Prices---Spreads" by Thomas B. Smith, U.S. Dept. of Agr., Econ. Res. Ser., MRR-898, August 1970.

Farm-to-retail price spreads are reported for a 3-pound grocery pack of shortening during 1947-68 and for a 24-ounce pack of salad or cooking oil during 1964-68. Retail prices for major and minor brands are evaluated, as are types of retail outlet in six U.S. areas.

8. "The Farm Machinery and Equipment Industry: Its Changing Structure and Performance" by Paul E. Nelson, Jr., U.S. Dept. of Agr., Econ. Res. Ser., MRR-892, August 1970.

The farm machinery and equipment industry diversified substantially between 1954 and 1966. Firms outside the industry acquired facilities within it, and firms within it acquired facilities outside. Establishments and companies with 500 or more employees greatly decreased in numbers. Expenditures for salaries, wages, fringe benefits, advertising, research and development, and State and local taxes increased significantly. Profits as a percentage of net worth fluctuated, ranging from 1.3 to 10.9 percent. These were lower than for most other industries.

: Unless otherwise indicated, items listed are Economic :
 : Research Service publications and single copies may be :
 : obtained free from the Division of Information, Office of :
 : Management Services, U.S. Department of Agriculture, :
 : Washington, D. C. 20250. :
 : :
 : Publications issued by State Agricultural Experiment :
 : Stations may be obtained from the issuing Station. :
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Table 16.--Farm food products: Retail cost, farm value of equivalent quantities sold by producers, byproduct allowance, farm-retail spread, and farmer's share of retail cost, July-September 1970.

Product 1/	Farm equivalent	Retail unit	Retail cost	Gross farm value	Byproduct allowance 2/	Net farm value	Farm-retail spread	Farmer's share
			Dollars	Dollars	Dollars	Dollars	Dollars	Percent
Market basket			1,234.51	---	---	481.89	752.62	39
Meat products			379.50	---	---	205.33	174.17	54
Dairy products			218.93	---	---	104.18	114.75	48
Poultry and eggs			91.93	---	---	49.72	42.21	54
Bakery and cereal products 3/								
All ingredients	Farm produce equivalent to products bought	Average quantities purchased per urban wage-earner and	184.97	---	---	35.36	149.61	19
Grain	per urban wage-earner and clerical-worker household in 1960-61	clerical-worker household in 1960-61	---	31.31	5.63	25.68	---	14
All fruits and vegetables			263.48	---	---	65.51	197.97	25
Fresh fruits and vegetables			135.95	---	---	41.05	94.90	30
Fresh fruits			55.81	---	---	16.05	39.76	29
Fresh vegetables			80.14	---	---	25.00	55.14	31
Processed fruits and vegetables			127.53	---	---	24.46	103.07	19
Fats and oils			41.15	29.81	17.70	12.11	29.04	29
Miscellaneous products			54.55	---	---	9.68	44.87	18
			Cents	Cents	Cents	Cents	Cents	Percent
Beef, Choice grade 4/	2.28 lb. Choice grade cattle	Pound	100.1	68.0	4.6	63.4	36.7	63
Lamb, Choice grade 5/	2.47 lb. lamb	Pound	108.2	65.9	5.6	60.3	47.9	56
Pork 4/	1.97 lb. hogs	Pound	79.0	43.0	3.3	39.7	39.3	50
Butter	Cream and whole milk	Pound	86.9	106.4	44.2	62.2	24.7	72
Cheese, American process	Milk for American cheese	1 pound	50.5	22.9	.9	22.0	28.5	44
Ice cream	Cream, milk, and sugar	gallon	85.2	---	---	28.1	57.1	33
Milk, evaporated	Milk for evaporating	14 1/2-ounce can	19.0	9.2	.2	9.0	10.0	47
Milk, fresh								
Home delivered	4.39 lb. Class I milk	1/2 gallon	65.4	---	---	28.6	36.8	44
Sold in stores	4.39 lb. Class I milk	1/2 gallon	57.4	---	---	28.6	28.8	50
Chickens, frying, ready-to-cook	1.37 lb. broiler	Pound	40.4	---	---	18.4	22.0	46
Eggs, Grade A large	1.03 dozen	Dozen	59.1	---	---	37.5	21.6	63
Bread, white								
All ingredients	Wheat and other ingredients	Pound	24.5	---	---	3.4	21.1	14
Wheat .....	.877 lb. wheat	Pound	---	3.0	.4	2.6	---	11
Bread, whole wheat	.618 lb. wheat	Pound	36.9	---	---	3.0	33.9	8
Cookies, sandwich	.528 lb. wheat	Pound	53.2	---	---	4.7	48.5	9
Corn flakes	2.87 lb. yellow corn	12 ounces	32.0	6/6.8	6/3.8	6/3.0	29.0	9
Flour, white	6.8 lb. wheat	5 pounds	59.0	23.6	3.0	20.6	38.4	35
Apples	1.04 lb. apples	Pound	25.9	---	---	7.2	18.7	28
Grapefruit	1.03 grapefruit	Each	20.8	---	---	5.6	15.2	27
Lemons	1.04 lb. lemons	Pound	30.6	---	---	8.6	22.0	28
Oranges	1.03 doz. oranges	Dozen	90.1	---	---	22.1	68.0	25
Cabbage	1.08 lb. cabbage	Pound	13.3	---	---	3.5	9.8	26
Carrots	1.03 lb. carrots	Pound	17.5	---	---	5.0	12.5	29
Celery	1.08 lb. celery	Pound	18.3	---	---	5.7	12.6	31
Cucumbers	1.09 lb. cucumbers	Pound	20.1	---	---	6.3	13.8	31
Lettuce	1.88 lb. lettuce	Head	32.6	---	---	12.7	19.9	39
Onions	1.06 lb. onions	Pound	16.5	---	---	4.8	11.7	29
Peppers, green	1.09 lb. peppers	Pound	36.9	---	---	10.7	26.2	29
Potatoes	10.42 lb. potatoes	10 pounds	99.0	---	---	28.6	70.4	29
Tomatoes	1.18 lb. tomatoes	Pound	36.2	---	---	12.2	24.0	34
Peaches, canned	1.60 lb. Calif. cling peaches	No. 2 1/2 can	35.7	---	---	6.1	29.6	17
Pears, canned	1.85 lb. pears for canning	No. 2 1/2 can	49.8	---	---	9.9	39.9	20
Beets, canned	1.24 lb. beets for canning	No. 303 can	18.8	---	---	1.4	17.4	.7
Corn, canned	2.495 lb. sweet corn	No. 303 can	24.6	---	---	3.0	21.6	12
Peas, canned	.69 lb. peas for canning	No. 303 can	25.2	---	---	3.8	21.4	15
Tomatoes, canned	1.84 lb. tomatoes for canning	No. 303 can	21.8	---	---	3.2	18.6	15
Orange juice, concentrate, frozen	3.42 lb. oranges	6-ounce can	22.3	---	---	7.3	15.0	33
French fried potatoes, frozen	1.38 lb. potatoes	9 ounces	16.6	---	---	2.9	13.7	17
Peas, frozen	.70 lb. peas for freezing	10 ounces	21.2	---	---	3.6	17.6	17
Beans, navy	1.00 lb. Mich. dry beans	Pound	19.1	---	---	6.7	12.4	35
Margarine	Soybeans, cottonseed, and milk	Pound	30.1	21.3	12.7	8.6	21.5	29
Peanut butter	1.33 lb. peanuts	12-ounce jar	47.9	---	---	16.5	31.4	34
Salad and cooking oil	Soybeans, cottonseed, and corn	Pint	57.9	49.3	35.1	14.2	43.7	25
Vegetable shortening	Soybeans and cottonseed	3 pounds	89.8	75.8	45.5	30.3	59.5	34
Sugar	Sugar beets and cane	5 pounds	65.5	26.1	1.6	7/24.5	7/41.0	7/37
Spaghetti with sauce, canned	Wheat, tomatoes, cheese, sugar	15 1/2-ounce can	18.6	---	---	2.0	16.6	11

1/ Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal. 2/ Gross farm value adjusted to exclude imputed values of byproducts obtained in processing. 3/ For the bakery products group and the individual wheat products, gross farm value, byproduct allowance, net farm value, and farmer's share are based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program. 4/ Data for beef and pork have been extensively revised, for discussion of the revision see article in November 1969 issue of "Marketing and Transportation Situation." 5/ Farm product equivalents for lamb have been revised to allow for loss through pilferage, spoilage, dehydration and refacing and economic losses incurred through selling cuts in a lower-priced form or at special low prices because of quality deterioration. 6/ Based on market price of corn received by farmers; no allowance made for price support payment received by farmers who comply with the Federal Feed Grain Program. 7/ Net farm value adjusted for Government payments to producers was 28.3 cents, farm-retail spread adjusted for Government processor tax was 38.3 cents, farmer's share of retail cost based on adjusted farm value was 43 percent.

Table 17.--Farm food products: Retail cost and farm value, July-September 1970, April-June 1970, July-September 1969 and 1957-59 average

Product 1/	Retail unit	Retail cost						Net farm value 2/					
		July-September 1970	April-June 1970	July-September 1969	1957-59 average	Percentage change: July-Sept. 1970 from July-Sept. 1969		July-September 1970	April-June 1970	July-September 1969	1957-59 average	Percentage change: July-Sept. 1970 from July-Sept. 1969	
		Dollars	Dollars	Dollars	Dollars	Percent	Percent	Dollars	Dollars	Dollars	Dollars	Percent	Percent
Market basket		1,234.51	1,226.52	1,194.74	982.65	0.7	3.3	481.89	3/483.45	492.28	387.87	-0.3	-2.1
Meat products		379.50	3/379.27	371.81	85.05	0.1	2.1	205.33	210.21	217.13	154.47	-2.3	-5.4
Dairy products		218.93	217.30	209.00	173.33	0.8	4.8	104.18	3/104.04	101.13	77.85	0.1	3.0
Poultry and eggs		91.93	3/89.43	96.37	93.02	2.8	-4.6	49.72	45.58	56.22	56.28	9.1	-11.6
Bakery and cereal products 4/													
All ingredients	Average quantities purchased per urban wage-earner and	184.97	3/182.67	173.89	148.40	1.3	6.4	35.36	3/35.25	33.17	30.55	0.3	6.6
Grain	clerk-worker	---	---	---	---	---	---	25.68	25.45	24.39	23.40	0.9	5.3
All fruits and vegetables	household	263.48	3/263.56	254.65	202.96	0	3.5	65.51	3/66.38	65.47	50.05	-1.3	0.1
Fresh fruits and vegetables ..	in	135.95	3/137.33	129.36	91.15	-1.0	5.1	41.05	3/42.28	38.11	28.70	-2.9	7.7
Fresh fruits	1960-61	55.81	3/49.70	54.89	36.26	12.3	1.7	16.05	3/13.39	15.33	12.26	19.9	4.7
Fresh vegetables		80.14	87.63	74.47	54.89	-8.5	7.6	25.00	3/28.89	22.78	16.44	-13.5	9.7
Processed fruits and vegetables		127.53	126.23	125.29	111.81	1.0	1.8	24.46	3/24.10	27.36	21.35	1.5	-10.6
Fats and oils		41.15	40.37	37.75	37.56	1.9	9.0	12.11	3/12.31	9.80	11.19	-1.6	23.6
Miscellaneous products		54.55	53.92	51.27	42.33	1.2	6.4	9.68	3/9.68	9.36	7.48	0	3.4
		Cents	Cents	Cents	Cents	Percent	Percent	Cents	Cents	Cents	Cents	Percent	Percent
Beef, Choice grade 5/	Pound	100.1	99.3	101.0	77.4	0.8	-0.9	63.4	3/63.3	62.8	51.3	0.2	1.0
Lamb, Choice grade	Pound	108.2	107.0	105.2	73.8	1.1	2.9	60.3	58.9	60.7	41.9	2.4	-0.7
Pork 3/	Pound	79.0	80.0	78.0	59.8	-1.2	1.3	39.7	41.9	46.8	31.9	-5.3	-15.2
Butter	Pound	86.9	86.4	84.5	73.2	0.6	2.8	62.2	3/62.3	63.0	52.6	-0.2	-1.3
Cheese, American process	1/2 pound	50.5	50.3	47.5	32.3	0.4	6.3	22.0	3/22.0	21.1	14.2	0	4.3
Ice cream	1/2 gallon	85.2	84.1	81.1	84.2	1.3	5.1	28.1	28.1	27.8	21.0	0	1.1
Milk, evaporated	14 3/4-ounce can	19.0	18.5	17.7	14.5	2.7	7.3	9.0	9.1	8.6	6.2	-1.1	
Milk, fresh													
Home delivered	1/2 gallon	65.4	65.0	62.5	50.8	0.6	4.6	28.6	28.5	27.6	21.9	0.4	3.6
Sold in stores	1/2 gallon	57.4	57.2	55.3	46.6	0.3	3.8	28.6	28.5	27.6	21.9	0.4	3.6
Chickens, frying, ready-to-cook ..	Pound	40.4	41.0	44.5	43.5	-1.5	-9.2	18.4	18.7	22.7	24.4	-1.6	-18.9
Eggs, Grade A large	Dozen	59.1	54.1	59.8	56.2	9.2	-1.2	37.5	31.1	40.2	36.1	20.6	-6.7
Bread, white													
All ingredients	Pound	24.5	24.0	23.0	18.9	2.1	6.5	3.4	3.4	3.3	3.0	0	3.0
Wheat	Pound	---	---	---	---	---	---	2.6	2.6	2.5	2.4	0	4.0
Bread, whole wheat 6/	Pound	36.9	36.4	---	---	1.4	17.1	3.0	3.0	---	---	0	---
Cookies, sandwich	Pound	53.2	51.8	50.0	---	2.7	6.4	4.7	4.7	4.4	---	0	6.8
Corn flakes	12 ounces	32.0	31.5	31.4	24.5	1.6	1.9	3.0	2.7	2.7	2.4	11.1	11.1
Flour, white	5 pounds	59.0	59.1	58.0	53.3	-0.2	1.7	20.6	20.5	19.7	18.8	0.5	4.6
Apples	Pound	25.9	22.3	27.4	16.1	16.1	-5.5	7.2	5.6	7.1	5.0	28.6	1.4
Grapefruit	Each	20.8	16.4	18.2	10.7	26.8	14.3	5.6	4.8	5.5	2.7	16.7	1.8
Lemons	Pound	30.6	30.7	29.2	18.4	-0.3	4.8	8.6	7.8	10.8	4.2	10.3	-20.4
Oranges	Dozen	90.1	81.0	85.1	66.0	11.2	5.9	22.1	18.4	18.8	23.2	20.1	17.6
Cabbage	Pound	13.3	16.7	11.4	8.7	-20.4	16.7	3.5	5.7	3.5	2.4	-38.6	0
Carrots	Pound	17.5	17.0	19.2	14.5	2.9	-8.9	5.0	4.9	7.8	3.7	2.0	-35.9
Celery	Pound	18.3	23.0	19.9	15.3	-20.4	-8.0	5.7	7.5	6.7	4.4	-24.0	-14.9
Cucumbers	Pound	20.1	30.7	21.6	---	-34.5	-6.9	6.3	10.9	7.6	---	-42.2	-17.1
Lettuce	Head	32.6	28.0	27.4	22.6	16.4	19.0	12.7	7.8	8.3	6.0	62.8	53.0
Onions	Pound	16.5	18.2	14.7	10.1	-9.3	12.2	4.8	5.8	4.7	3.4	-17.2	2.1
Peppers, green	Pound	36.9	71.9	37.2	---	-48.7	-8	10.7	33.8	11.9	---	-68.3	-10.1
Potatoes	10 pounds	99.0	94.2	87.8	58.3	5.1	12.8	28.6	29.7	23.5	17.8	-3.7	21.7
Tomatoes	Pound	36.2	46.4	35.6	30.1	-22.0	1.7	12.2	3/16.4	11.1	10.6	-25.6	9.9
Peaches, canned	No. 2 1/2 can	35.7	34.7	34.6	34.3	2.9	3.2	6.1	5.9	6.0	6.1	3.4	1.7
Pears, canned	No. 2 1/2 can	49.8	48.5	50.0	---	2.7	-0.4	9.9	8.3	9.3	---	19.3	6.5
Beets, canned	No. 303 can	18.8	18.6	18.2	---	1.1	3.3	1.4	3/1.4	1.4	---	0	0
Corn, canned	No. 303 can	24.6	24.3	23.8	17.8	1.2	-3.4	3.0	3.0	3.0	2.4	0	0
Peas, canned	No. 303 can	25.2	25.0	25.0	21.0	0.8	0.8	3.8	3.7	3.7	3.1	2.7	2.7
Tomatoes, canned	No. 303 can	21.8	21.0	19.6	15.6	3.8	11.2	3.2	3/3.2	3.6	2.3	0	-11.1
Orange juice, concentrate, frozen	6-ounce can	22.3	22.5	24.4	23.4	-0.9	-8.6	7.3	7.3	11.3	8.2	0	-35.4
French fried potatoes, frozen	9 ounces	16.6	16.6	16.3	---	0	1.8	2.9	2.9	3.3	---	0	-12.1
Peas, frozen	10 ounces	21.2	21.1	21.0	19.9	0.5	1.0	3.6	3.5	3.6	3.2	2.9	0
Beans, navy	Pound	19.1	19.0	19.6	16.3	0.5	-2.6	6.7	6.7	7.1	6.9	0	-5.6
Margarine	Pound	30.1	29.7	27.7	27.4	1.3	8.7	8.6	3/8.8	6.8	7.8	-2.3	26.5
Peanut butter	12-ounce jar	47.9	47.2	45.9	41.4	1.5	4.4	16.5	16.2	15.9	14.1	1.9	3.8
Salad and cooking oil	Pint	57.9	56.2	52.0	---	3.0	11.3	14.2	3/14.4	11.0	---	-1.4	29.1
Vegetable shortening	3 pounds	89.8	88.0	82.0	90.4	2.0	9.5	30.3	31.2	23.6	28.2	-2.9	28.4
Sugar	5 pounds	65.5	64.2	62.6	54.5	2.0	4.6	24.5	24.5	25.2	20.2	0	-2.8
Spaghetti with sauce, canned	15 1/2-ounce can	18.6	18.4	17.5	---	1.1	6.3	2.0	2.0	2.1	---	0	-4.8

1/ Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal.

2/ Gross farm value adjusted to exclude imputed value of byproducts obtained in processing.

3/ Many retail cost and farm value figures for July-September 1969, have been revised; figures in other columns revised as indicated.

4/ For the bakery products group and the individual wheat product, the net farm value is based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost equals the value of the domestic marketing certificate received by farmers complying fully with the Wheat Program.

5/ Data for beef and pork have been extensively revised. For discussion of the revision see article in November 1969 issue of "Marketing and Transportation Situation".

6/ New series for 100 percent whole wheat bread which began in April 1970 is not comparable with earlier series for whole or cracked wheat bread.

Table 18.--Farm food products: Farm-retail spread and farmer's share of the retail cost, July-September 1970, April-June 1970, July-September 1969 and 1957-59 average.

Product 1/	Retail unit	Farm-retail spread 2/				Farmer's share				
		July-September 1970	April-June 1970	July-September 1969	1957-59 average	Percentage change from July-September 1970 to April-June 1970	July-September 1970	April-June 1970	July-September 1969	1957-59 average
		Dollars	Dollars	Dollars	Dollars	Percent	Percent	Percent	Percent	Percent
Market basket		752.62	3/743.07	702.46	594.78	1.3	7.1	39	39	41
Meat products		174.17	169.06	154.68	130.58	3.0	12.6	54	55	58
Dairy products		114.75	3/113.26	107.87	95.48	1.3	6.4	48	48	45
Poultry and eggs		42.21	43.84	40.15	36.74	-3.7	5.1	54	51	58
Bakery and cereal products 4/		149.61	3/147.42	140.72	117.85	1.5	6.3	19	19	21
All ingredients		-	-	-	-	-	-	14	14	14
Grain		197.97	3/197.18	189.18	152.91	0.4	4.6	25	25	26
All fruits and vegetables		94.90	3/95.05	91.25	62.45	-0.2	4.0	30	31	29
Fresh fruits and vegetables ..		39.76	3/36.31	39.56	24.00	9.5	0.5	29	27	28
Fresh fruits		55.14	3/58.74	51.69	38.45	-6.1	6.7	31	33	31
Fresh vegetables		103.07	3/102.13	97.93	90.46	0.9	5.2	19	19	22
Processed fruits and vegetables		29.04	3/28.06	27.95	26.37	3.5	3.9	29	3/30	26
Fats and oils		44.87	3/44.24	41.91	38.45	1.4	7.1	18	18	18
Miscellaneous products										
		Cents	Cents	Cents	Cents	Percent	Percent	Percent	Percent	Percent
Beef, Choice grade	Pound	36.7	3/36.0	38.2	26.1	1.9	-3.9	63	3/64	62
Lamb, Choice grade	Pound	47.9	48.1	44.5	31.9	-4	7.6	56	55	58
Pork	Pound	39.3	38.1	31.2	28.0	3.1	26.0	50	52	60
Butter	Pound	24.7	3/24.1	21.5	20.6	2.5	14.9	72	3/72	72
Cheese, American process	pound	28.5	3/28.3	26.4	18.1	.7	8.0	44	44	44
Ice cream	gallon	57.1	56.0	53.3	63.2	2.0	7.1	33	33	34
Milk, evaporated	14 1/2-ounce can	10.0	9.4	9.1	8.3	6.4	9.9	47	49	49
Milk, fresh										
Home delivered	gallon	36.8	36.5	34.9	28.9	.8	5.4	44	44	44
Sold in stores	gallon	28.8	28.7	27.7	24.7	.3	4.0	50	50	50
Chickens, frying, ready-to-cook ..	Pound	22.0	22.3	21.8	19.1	-1.3	.9	46	46	51
Eggs, Grade A large	Dozen	21.6	23.0	19.6	20.1	-6.1	10.2	63	57	67
Bread, white										
All ingredients	Pound	21.1	20.6	19.7	15.9	2.4	7.1	14	14	14
Wheat	Pound	-	-	-	-	0	0	11	11	11
Bread, whole wheat 5/	Pound	33.9	5/33.4	-	-	1.5	-	8	5/8	-
Cookies, sandwich	Pound	48.5	47.1	45.6	-	3.0	6.4	9	9	9
Corn flakes	12 ounces	29.0	28.8	28.7	22.1	.7	1.0	9	9	9
Flour, white	5 pounds	38.4	38.6	38.3	34.5	-0.5	0.3	35	35	34
Apples	Pound	18.7	16.7	20.3	11.1	12.0	-7.9	28	25	3/26
Grapefruit	Each	15.2	11.6	12.7	8.0	31.0	19.7	27	29	3/30
Lemons	Pound	22.0	22.9	18.4	14.2	-3.9	19.6	28	25	37
Oranges	Dozen	68.0	62.6	66.3	42.8	8.6	2.6	25	23	3/22
Cabbage	Pound	9.8	11.0	7.9	6.3	-10.9	24.1	26	34	31
Carrots	Pound	12.5	12.1	11.4	10.8	3.3	9.6	29	29	41
Celery	Pound	12.6	15.5	13.2	10.9	-18.7	-4.5	31	33	34
Cucumbers	Pound	13.8	19.8	14.0	-	-30.3	-1.4	31	36	3/35
Lettuce	Head	19.9	20.2	19.1	16.6	-1.5	4.2	39	28	30
Onions	Pound	11.7	12.4	10.0	6.7	-5.6	17.0	29	32	32
Peppers, green	Pound	26.2	38.1	25.3	-	-31.2	3.6	29	47	32
Potatoes	10 pounds	70.4	64.5	64.3	40.5	9.1	9.5	29	32	3/27
Tomatoes	Pound	24.0	3/30.0	24.5	19.5	-20.0	-2.0	34	3/35	31
Peaches, canned	No. 2 1/2 can	29.6	28.8	28.6	28.2	2.8	3.5	17	17	3/17
Pears, canned	No. 2 1/2 can	39.9	40.2	40.7	-	-7	-2.0	20	17	19
Beets, canned	No. 303 can	17.4	17.2	16.8	-	1.2	3.6	7	3/8	8
Corn, canned	No. 303 can	21.6	21.3	20.8	15.4	1.4	3.8	12	12	13
Peas, canned	No. 303 can	21.4	21.3	21.3	17.9	0.5	0.5	15	15	15
Tomatoes, canned	No. 303 can	18.6	3/17.8	16.0	13.3	4.5	16.2	15	3/15	18
Orange juice, concentrate, frozen	6-ounce can	15.0	15.2	13.1	15.2	-1.3	14.5	33	32	46
French fried potatoes, frozen	9 ounces	13.7	13.7	13.0	-	0	5.4	17	17	20
Peas, frozen	10 ounces	17.6	17.6	17.4	16.7	0	1.1	17	17	17
Beans, navy	Pound	12.4	12.3	12.5	9.4	0.8	-0.8	35	35	36
Margarine	Pound	21.5	3/20.9	20.9	19.6	2.9	2.9	29	30	3/25
Peanut butter	12-ounce jar	31.4	31.0	30.0	27.3	1.3	4.7	34	34	35
Salad and cooking oil	Pint	43.7	3/41.8	41.0	-	4.5	6.6	25	26	21
Vegetable shortening	3 pounds	59.5	56.8	58.4	62.2	4.8	1.9	34	35	3/29
Sugar	5 pounds	41.0	39.7	37.4	34.3	3.3	9.6	37	38	40
Spaghetti with sauce, canned	15 1/2-ounce can	16.6	16.4	15.4	-	1.2	7.8	11	11	12

1/ Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal.

2/ The farm-retail spread is the difference between the retail cost and the net farm value shown in table on opposite page.

3/ Many farm-retail spread figures for July-September 1969, have been revised; figures in other columns revised as indicated.

4/ For the bakery products group and the individual wheat products, the farmer's share is based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program.

5/ New series for 100 percent whole wheat bread which began in April 1970 is not comparable with earlier series for whole or cracked wheat bread.

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MTS-179 Marketing and Transportation Situation